

# **Pricing Butcher Hogs at Illinois Country Markets**

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# PRICING BUTCHER HOGS AT ILLINOIS COUNTRY MARKETS

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**T**HIS STUDY CONSIDERS THE EXTENT to which Illinois country butcher hog prices were influenced by weight, consist, size of lot, and time of sale. These factors were related to alternative supply areas, different kinds of buyers, and different kinds of country hog-marketing organizations.

Illinois farmers market over 10,000,000 hogs every year. Income from the sale of these hogs amounts to over 20 percent of the state's farm income. Analysis of alternative Illinois farm enterprises revealed that in recent years "only the hog enterprise showed a return for management and profit."<sup>2</sup> This in spite of the fact that the returns to the hog enterprise provided a margin of only 92 cents per hundred pounds of hogs marketed.

Part of the reason for this narrow margin of profit is that the industry is confronted with a basic marketing problem. How can producers or the trade understand, interpret, and use, the market pricing system that exists in the state? Price differences received at alternative markets may only amount to from 10 to 50 cents per hundred-weight. This pricing situation occurs because of lack of adequate marketing information. Misunderstanding of imprecise and confusing price information can be costly to all segments of the industry, but especially so to the 79,000 Illinois hog producers.

## THE ILLINOIS HOG MARKET

The marketing structure of Illinois has changed greatly, and many individual pricing arrangements have been established by local markets and packer buyers in the past 30 years. Since 1920, Illinois hog marketing has undergone a transition from a dominant terminal or central marketing system to an integrated, direct country-marketing system. But the transition is not yet complete, and each new change, regardless of origin, calls for a reappraisal, and for the realignment of facilities, services, and pricing arrangements.

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In 1920, only 4.7 percent of Illinois hogs were marketed directly to packers; by 1930, 11.6 percent were marketed directly; and by 1934, 21.2 percent of Illinois hogs moved directly to packers from country points.<sup>1</sup> In 1956, 49 percent moved directly,<sup>2</sup> and the trend of increased country hog marketings has continued since.

In 1928, there were only two local livestock markets in the state. By 1932, the number had increased to 19. In 1932, 17 local packing plants bought all or part of their livestock directly from farmers at interior points. Before this time, local shipping associations had been organized to assemble and ship livestock to terminal markets. At the height of the shipping association movement in 1925, some 300 active livestock-shipping associations were operating in the country.

Many local concentration points persist throughout the state, but the orientation of flow has changed from terminal to country marketing. Today four major order-buying firms and more than ten packers have established many country buying points. The order-buying firms, with central offices, operate as interior merchandisers for hogs and for some cattle and sheep. These firms have developed local country "feeder" points to buy hogs directly from farmers and provide a source of supply to fill out-of-state packer orders. These organizations accumulate one or more daily orders for specified kinds of hogs and telephone or radio pricing and shipping instructions to local country dealers or to their own country points. Loads of hogs are concentrated in the country to satisfy the orders. At the end of the trading day, shipments are made to fill the packer orders.

Packers gradually established integrated country marketing systems. Terminal slaughtering facilities were abandoned and new plants were built near areas of surplus production to intercept the flow of livestock that formerly had moved to terminal livestock markets. Packers, with their many country points, balance their own packing-plant needs with livestock bought directly at their door from their own country buying points, from dealers, from interior order buyers, from their own feed yards, or from the terminal markets. By 1964, over 175 local Illinois markets and 74 country auctions had been developed to handle local sales of Illinois livestock.

The change in the market structure can be easily understood, but no well defined and integrated market pricing system has been developed for country hog markets. In the case of local markets, pricing arrange-

<sup>1</sup> *The Direct Marketing of Hogs*, USDA Misc. Pub. 222, p. 204.

<sup>2</sup> *Livestock Marketing in The North-Central Region*, Ohio Exp. Sta. Res. Bul. 846, December, 1959, p. 51.

ments have been closely guarded by the individual market, and price comparisons derived from terminal market news quotations are of questionable value since they do not reflect the existing hog marketing structure. For this reason, today's hog producer is faced with a serious problem as he attempts to evaluate the different systems and alternative country market outlets, and sell his hogs where he will be able to obtain the highest returns.

## NATURE OF THE STUDY

This study was initiated to describe the pricing system of Illinois country hog markets, and to obtain a better understanding of factors that govern prices paid for butcher hogs at Illinois country markets. Specific objectives were to determine the effect of quality, weight-class distribution (consist), size of lot, and time of marketing on prices paid for hogs. These factors in turn were related to alternative Illinois supply areas, different kinds of buyers, and alternative types of country organizations who bought Illinois hogs. Further analysis was made to determine if significant differences were paid for hogs by individual markets in the same immediate supply area, and within the same organization in the same supply area.

This study also considered how well country newspaper market quotations coincide with actual prices paid for hogs.

Detailed purchase invoices showing the date, name of market, location, number of hogs, weight of hogs, and price per hundred-weight, were obtained for all transactions carried on by 106 of the 175 country markets (Table 1). These markets handled over 30,000 individual lots of hogs during the five two-week time periods included in the analysis. Two time periods were arbitrarily set up to coincide with the anticipated periods of the year with the highest and lowest market receipts. The others were spaced to evaluate prices during other periods of the year. (Fig. 1.)

To facilitate analysis, the state was divided into seven market areas on the basis of livestock concentration, dominant marketing systems, and similarity of production enterprises in each area. The extent of sampling in each area is shown in Table 1. Marketings by the firms included in our sample represented over 80 percent of the slaughter hogs sold at Illinois country points.

Data were obtained for all transactions on each marketing day during the following periods: September 14-26, November 30 to December 12, February 15-27, June 20 to July 1, in 1959 and 1960.

Table 1.—Number of Direct Buying Points Located in Each Market Area and the Number Included in the Sample, Illinois, 1959-1960<sup>a</sup>

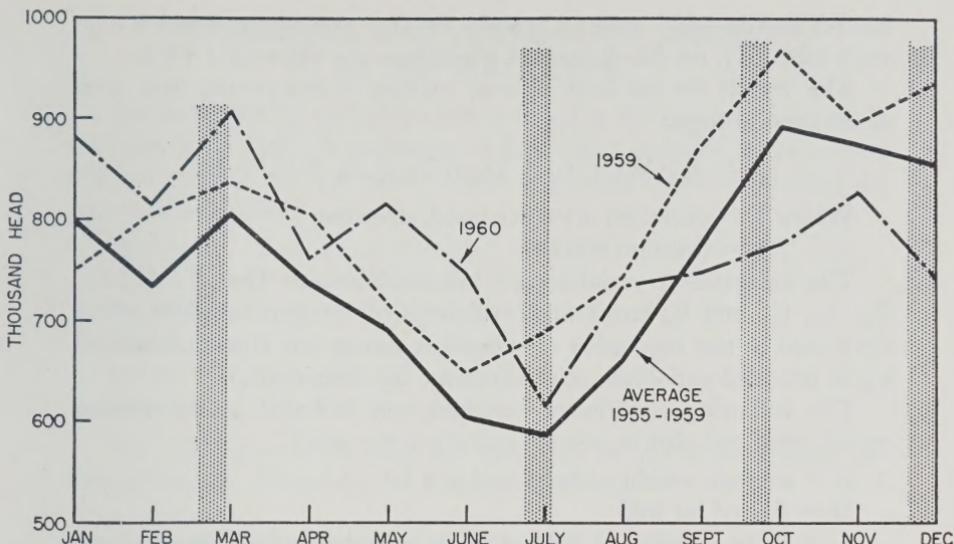
Area number	Number of direct buying points in area	Number in sample	Percent sampled	Number of auctions in area	Number in sample
1.....	64	23	36	15	0
2.....	47	34	72	8	0
3.....	7	5	71	9	1
4.....	10	10	100	11	0
5.....	8	6	75	4	0
6.....	29	15	51	15	2
7.....	10	6	60	13	4
Total.....	175	99	57	75	7

<sup>a</sup> The sample included all direct marketing organizations which would cooperate with the enumerators. All known marketing points in the state were contacted. Since auction markets handled mostly feed stock, the enumerators were instructed to obtain records only from those who were marketing fat slaughter stock.

The analysis considered only butcher hogs weighing from 170 to 270 pounds. Boars, "busts," and "junk" hogs that sold for less than \$10 per hundredweight were excluded. Lightweight hogs were considered as feeder pigs and were also excluded.

Since none of the markets identified "quality" in their transactions, but bought hogs on a weight-schedule basis, further reference to "quality" hog pricing will not be made in the analytical parts of this report. The analysis does consider consist as a factor in pricing Illinois hogs. Consist is defined as the proportionate distribution of various weight classes that make up a load, lot, or total receipts at a specified market. A "lot" was defined as all the hogs sold in one market transaction which were weighed together and sold at one price. The number marketed in a lot varied.

Weighted averages of prices for each individual lot were computed for each 10-pound butcher weight class as well as for classes of 180 to 200, 200 to 220, 220 to 240, and 240 to 270 pounds. Any marketing charges such as yardage, commissions, etc., were deducted from each price, where applicable, to calculate a net price per hundredweight paid to farmers. Since each farmer absorbs the cost of transportation from the farm to the point of first sale; "net price" is simply the price at the weighing point. No allowance was made for shrinkage that may have occurred. Since most hogs were weighed directly off the trucks and were priced at the time of weighing, the price data relate to hogs weighed at country markets as they were unloaded from the truck.



Distribution of the market flow of hogs from Illinois farms, 1955-1960 (data of the Illinois Crop Reporting Service). Shaded vertical lines identify the periods of the year when this study was made.

(Fig. 1)

### Deviation prices

The level of hog prices varied seasonally as much as 30 percent during the time this study was made. Since the seasonally changing price level would have concealed some relationships which existed among prices paid for lots of hogs in the various categories (see below), all price comparisons were reduced to deviations from a base price. The base price was the daily weighted average price paid for all lots of hogs that were marketed at an average weight of from 200 to 220 pounds. A deviation price was computed for each lot sold by subtracting the daily base price from the price actually paid. The difference which could be positive or negative was recorded as the deviation price for each lot. This method of using deviation prices reduced all prices paid to a common denominator and simplified the statistical analysis.

### Analysis of data (see appendix for details)

Regression and correlation analyses, with the use of dummy variables, were the primary statistical methods used to determine the influence of the independent variables of average weight of lot (W), size of lot sold (L), market day of sale (D), season of sale (T),

market area in which sold (A), and market organization to which hogs were sold (E), on the dependent variable — the price paid (Y).

The models for the least squares analysis of the pricing data were of the general form:

$$Y = u + W_i + L_j + D_k + T_m + A_n + C_o + E_p$$

Where  $Y$  = deviation price per hundredweight

$u$  = constant term

The independent variables are identified above. The  $W_i$ ,  $L_j$ ,  $D_k$ ,  $T_m$ ,  $A_n$ ,  $C_o$ , and  $E_p$  terms are coefficients of dummy variables which were used to test regression relationships among lots classified according to unscaled variables. (See appendix for definitions.)

The following continuous variables, not included in the general model, were included in selected models in the study:

$G$  = average weight of hogs sold in a lot

$H$  = size of lot sold

$I$  = daily number of hogs sold in twelve terminal markets and interior Iowa

Since such variables as season, market day, and market area are not conventionally scaled attributes, it was necessary to assign them numerical values to introduce them into the models. Suits<sup>1</sup> described the procedure for assigning numerical values in the general case.

The method by which this procedure was applied to specific classifications of independent variables in the present study can be explained by example. Market area classifications were defined by dummy variables associated with  $A_1$ ,  $A_2$ ,  $A_3$ ,  $A_4$ ,  $A_5$ ,  $A_6$ , and  $A_7$ . When a particular lot of hogs was sold in Area 2, the dummy variable for  $A_2$  was assigned the value 1, and the remaining dummy variables of area classification were assigned the value of 0. If this lot had been sold on Monday, the dummy variable for  $D_1 = 1$  and other dummy variables for market day of sale were assigned a value of 0. If sold during the September 1960 period, the dummy variable for  $T_5$  was 1, and those for  $T_1-T_4$  were set at 0.

The usual tests of significance were applied to the net regression coefficients using Student's  $t$  statistic,  $t = b/s_b$ .<sup>2</sup>

<sup>1</sup> Suits, Daniel B., "Use of Dummy Variables in Regression Equations" *Journal of American Statistical Association*, December 1957, p. 550.

<sup>2</sup> In testing the regression coefficients of dummy variables, the test is for significant differences between deviation price in the base (deleted) classification, and deviation price in the period designated by the subscript on the coefficient. The symbol "b" in  $t = b/s_b$  is interpreted to include the coefficients of the dummy variables which are indicated by subscripted capital letters in Models I-VI.

## REGRESSION AND CORRELATION MODELS AT THE STATE LEVEL

The independent variables were included in various combinations in six different models. A discussion of the factors included in the models will be found in the appendix. These regression models contained the following variables:

Model I	$Y = u + b_1G + b_2G^2 + b_3H + b_4I + D_k + T_m + A_n$
Model II	$Y = u + b_1G + L_j + T_m$
Model III	$Y = u + b_1G + L_j + T_m + E_p$
Model IV	$Y = u + W_1 + T_m + A_n$
Model V	$Y = u + b_1G + b_3H + b_4I + A_n$
Model VI	$Y = u + W_1 + b_3H + b_4I + A_n$

The regression coefficients are indicated by the same symbol, although they are different in the various equations.

### Analysis of country market data by weight class

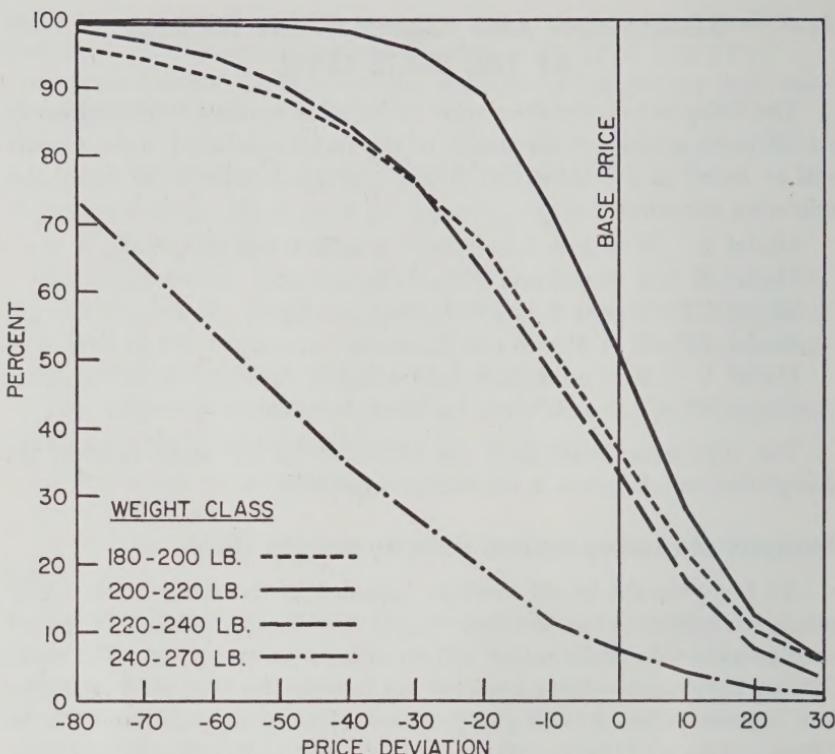
All hogs bought by all markets included in the study were segregated according to the average weight per lot marketed. Weighted average prices for each major weight class were computed. The relationship between weight and prices paid followed an inverted U pattern. The highest prices, \$14.43 per hundredweight, were paid for 200- to 220-pound hogs; 180- to 200-pound hogs sold at \$14.28; 220- to 240-pound hogs were marketed at \$14.29; and 240- to 270-pound hogs brought \$13.92 per hundredweight. Prices for different weight classes varied from 14 cents to 51 cents lower than the 200 to 220 pound average price. The effect of weight on prices paid is illustrated in Fig. 2 and the data are given in Appendix Table 1.

The net regression coefficients in Model I indicate that prices paid for different weight classes of hogs (Y) were dependent on hog weights (G).

Weight variables included in Models IV and V (Appendix Table 2), indicated that prices of hogs in other weight classes averaged from 14 to 61 cents per hundredweight less than 200- to 220-pound hogs. Each difference was significant at the 1-percent level.<sup>1</sup>

Since highest prices were paid for 200- to 220-pound live hogs, and wholesale cuts from this class of hogs are of higher value than wholesale cuts from other weight classes of hogs (Table 2), it is clear that

<sup>1</sup> The *t* ratio indicated that the probability of such a difference occurring as a result of random errors of sampling was less than 1 in 100.



Cumulative distribution of hogs sold at or above the stated deviation price, Illinois country markets, 1959-1960. (Fig. 2)

weight of hogs is a significant indicator of the value per hundredweight of carcass marketed.

The very large proportion (77 percent) of 200- to 220-pound hogs that were sold within 20 cents of the base price, indicates that weight was probably the most important single factor in pricing butcher hogs (Fig. 2). But a relatively large proportion of 180- to 200- and 220- to 240-pound hogs were also sold at prices within 20 cents of the base price.

### Pricing by size of lot

Over 20 percent of the lots with 1 to 4 hogs, and 7 percent of the lots with 5 to 9 head, were discounted 80 cents or more from the base price. For the large (over 100-head lots) only 4 percent were discounted 40 cents or more; 49 percent sold within 10 cents; and 76 percent of the large-sized lots sold within 20 cents of the base price (Appendix Table 3).

Table 2.—Yields of Specified Wholesale Pork Cuts From Butcher Hogs as a Percentage of Liveweight, by Weight Class

Wholesale cuts		180-200	200-220	220-240	240-270
	Price per pound (cents) <sup>a</sup>	(percent)			
Skinned hams					
10-12.....	41.0	7.60	2.77	....	....
12-14.....	38.5	5.52	7.80	4.66	....
14-16.....	38.0	....	2.46	8.07	8.53
16-18.....	37.5	....	....	....	4.12
Total ham.....		13.12	13.03	12.73	12.65
Loins					
Under 12.....	44.5	10.54	10.45	10.35	2.84
12-16.....	42.0	....	....	....	7.40
16-20.....	40.0	....	....	....	....
Total loin.....		10.54	10.45	10.35	10.24
Boston butts					
4-3.....	28.5	4.91	4.91	4.87	4.82
Regular picnic					
4-6.....	23.0	6.10	3.50	1.10	....
6-8.....	22.0	....	2.62	4.97	5.21
8-10.....	21.5	....	....	....	.83
Total picnic.....		6.10	6.12	6.07	6.04
Total 4 lean cuts.....		34.65	34.51	34.02	33.81
Bellies					
8-10.....	23.0	....	....	....	....
10-12.....	23.5	5.94	....	....	....
12-14.....	23.5	5.94	8.13	....	....
14-16.....	23.25	....	3.97	10.22	7.14
16-18.....	23.25	....	....	2.35	2.67
18-20.....	17.5	....	....	....	1.52
Total bellies.....		11.88	12.10	12.57	12.66
Spare ribs					
3 pounds down.....	38.0	2.10	2.14	2.01	2.00
Jowl butts					
Loose.....	9.0	2.20	2.25	2.33	2.42
Lean trim					
50 percent.....	20.0	1.76	1.97	1.75	1.97
80 percent.....	30.5	.71	.69	.77	.66
Total lean.....		2.47	2.66	2.52	2.63
Fat trim.....	6.0	12.84	13.03	13.74	14.11
Miscellaneous.....	7.0	2.34	2.34	2.30	2.43
<b>TOTAL.....</b>		<b>68.50</b>	<b>69.00</b>	<b>69.50</b>	<b>70.00</b>

<sup>a</sup> National Provisioner, September 24, 1964.

Size of lot was considered as a continuous independent variable in Models I, IV, V, and VI. The regression coefficient for lot size was significant at the 1-percent level, indicating that a part of the price deviation was dependent on the size of lot sold. In Models II and III,

using size of lot as dummy variables, it was found that hogs sold in 1- to 10-head lots and 11- to 20-head lots were priced significantly lower than those sold in 31- to 40-head lots. Those sold in lots of over 100 head were the only size-of-lot classes which brought significantly higher prices (about 8 cents per hundredweight) than the 31- to 40-head lots.

A larger proportion of light and heavyweight hogs were sold in smaller lots than medium butcher weights (Table 3). Some of the price differences between sizes of lots were probably due to the effect of a disproportionate distribution of different weights of hogs sold in small and large lots.

The average discount of 16 cents per hundredweight for hogs sold in small lots (1 to 10 head) compared with 31- to 41-head lots, while not large, is significant. Farmers would have received 37 cents less for each 230-pound hog sold in lots of from 1 to 10 head than they would have received for hogs of similar weight sold in lots of from 31 to 40 head. Fifty percent of the sales were in lot sizes of from 1 to 10 head, yet only 15 percent of the hogs were sold in these small-sized lots.

### Pricing by season of the year

Significant price differences existed (Appendix Table 2) between weight classes and prices paid during the different seasons. Models I through IV tested the relationship of weight classes on prices paid during different seasons of the year. The price deviation from the daily price base was less during June and December than at any other time. The large proportion (over 40 percent) of 240- to 270-pound hogs

Table 3.—Distribution of Transactions and Distribution of Hogs Sold by Size of Lot, for Each Weight Class and for Total, Illinois Country Hog Markets, 1959-1960

Size of lot (head)	Trans- actions	Percent of hogs sold in weight class				Total
		180-200	200-220	220-240	240-270	
1-4	49.5	5.3	1.8	2.1	6.2	14.5
5-9		18.1	9.7	10.3	14.2	
10-14	25.0	16.2	11.6	11.0	11.4	21.9
15-19		13.3	10.0	10.5	11.4	
20-29	13.3	21.7	20.6	21.6	21.4	21.1
30-39	5.4	10.2	12.9	13.5	11.3	12.7
40-49	2.2	4.0	6.6	7.0	6.0	6.5
50-99	3.6	8.5	16.0	16.7	12.9	15.1
Over 100	1.0	2.7	10.8	7.3	5.2	8.2
	100.0	100.0	100.0	100.0	100.0	100.0

which were discounted over 80 cents per hundredweight during these two periods largely explains the low price deviations. Weight class average prices during September for hogs weighing 190 to 250 pounds differed by less than 25 cents. Over 90 percent of the hogs were sold in these weight categories.

### Pricing by day of the week

It was found that hog prices were lower on Friday than any other day of the week. Monday and Wednesday prices were significantly different from Friday prices (Appendix Table 2). Monday prices averaged 6 cents and Wednesday prices 2 cents per hundredweight higher than Friday prices.

There was an uneven flow of market hogs during the week. Over 24 percent were marketed on Monday, 19.7 percent on Tuesday, 17.9 percent on Wednesday, 17.4 percent on Thursday, and 20.8 percent on Friday. While the prices and volume marketed on various days of the week differed significantly from a statistical standpoint, the observed price differences were not sufficiently large to encourage much change in the flow of market hogs. The higher Monday prices may have induced more hogs to be marketed early in the week.

The number of hogs sold on the 12 major terminal markets had little effect on the weight-class price deviations paid for hogs at Illinois country markets. The regression coefficients were not significant (Appendix Table 1).

## HOG PRICING IN SEVEN ILLINOIS MARKETING AREAS

Significant pricing differences existed between the seven Illinois market areas (Table 4 and Fig. 3). Area 7, adjacent to Chicago, had the highest average prices. Area 5, in southeastern Illinois, had the next highest average prices. Area 2, in western Illinois, had the lowest prices, and Area 1, in northwestern Illinois, had the next to the lowest prices. There was a difference of over 20 cents in the average prices paid in Area 2 and Area 7.

Two separate regression and correlation models were used in the area analysis. These models included the following variables:

$$\text{Model I} \quad Y = u + b_1 G + L_j + D_k + T_m$$

$$\text{Model II} \quad Y = u + W_i + T_m$$

In Model I, the 21- to 30-head lot size was used as base for size-of-lot analysis because the largest proportion of hogs were sold in this

Table 4.—A Comparison of Price Differences Paid for Butcher Hogs in Seven Illinois Market Areas<sup>a</sup>

Item	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	State
Weight class (difference from the base price, cents per hundredweight)								
180-200.....	-36.00*	-17.33*	-32.24*	-30.42*	-33.84*	23.03*	20.89*	-25.60*
200-220.....	—	—	—	—	—	base weight-class price	—	—
220-240.....	-12.64*	-15.84*	-14.99*	-14.34*	-17.86*	13.01*	11.61*	-13.82*
240-270.....	-60.76*	-53.70*	-66.43*	-66.71*	-86.57*	55.96*	51.33*	-60.45*
Size of lot (base size-of-lot price — — — — — — — — —)								
1-10 head.....	-19.43*	-9.46*	-22.36*	-22.08*	-42.54*	-14.69*	-11.60*	-16.57*
11-20.....	-3.30	-4.53*	-0.90	-2.83*	-20.95*	-1.83	-0.49	-3.40*
21-30.....	—	—	—	—	—	—	—	-1.40*
31-40.....	3.94	-0.36	1.54	2.30	-50.16*	2.40	-1.63	base
41-50.....	4.13	-1.22	0.60	7.93	-20.22	3.46	3.17	.89
51-75.....	4.44	-1.54	3.15	6.70	-75.18*	3.16	6.15	2.10
76-100.....	5.37	-2.22	11.95	9.75	-110.69	4.83	4.14	2.33
Over 100.....	12.48*	-0.34	8.26	29.04*	-122.16	8.98	8.79	9.46*
Day of week (base day price — — — — — — — — —)								
Monday.....	—	—	—	—	—	—	—	6.05*
Tuesday.....	1.07	-5.10*	-2.60	-5.36*	-4.44	-3.12*	1.38	2.76*
Wednesday.....	4.22*	-13.27*	-1.71	-3.00	-4.10	-1.07	2.53	2.48
Thursday.....	4.24*	-16.24*	-3.32	-3.08	2.08	-1.24	-0.89	1.85
Friday.....	2.87	-12.77	1.46	-1.12	-4.14	-4.17*	3.57	base
Season of year (base season price — — — — — — — — —)								
September '59.....	—	—	—	—	—	—	—	4.59*
December '59.....	-17.72*	-10.72*	-3.63	-15.04*	-12.12*	-11.50*	-15.07*	-2.44
February '60.....	-7.64*	-11.36*	-3.99	-6.71*	-9.25*	-6.00*	-9.02*	-4.43
June '60.....	-8.31*	-12.27*	-7.20*	-12.07*	-17.64*	-8.02*	-2.74	-5.49*
September '60.....	-9.41*	-22.73*	1.30	-7.26*	5.00	-1.42	-4.48	base
Market area Average price.....								
	-13.11*	-20.14*	-12.00*	-4.49*	-3.09*	-5.12	base	
Differences in value per hog								
180-200.....	-68	-32	-61	-57	-65	-44	-40	
200-220.....	—	—	—	—	base value per hog	—	—	
220-240.....	-30	-37	-35	-32	-41	-30	-28	
240-270.....	-1.56	-1.38	-1.68	-1.71	-2.22	-1.43	-1.30	

\* Price differences that were statistically significant.

<sup>a</sup> These results are not derived from a single equation. Interpretation is found in the text. See appendix tables for summary of the analyses.

category. Monday was the base market day classification, and September 1959 was the base used for the season classification. In Model II, the 200- to 220-pound weight class, and September 1959 were used as bases for the  $W_i$  and  $T_m$  classifications, respectively. The regression coefficients, number of observations, standard error of regression coefficients, the standard error of estimate, and coefficient of correlation for each market area are presented in Appendix Table 4.

## Characteristics of market areas

Several factors may contribute to the relatively high price level in Area 7. This area did not have a large surplus hog supply. The proximity of the Chicago terminal market, the presence of several important large country hog markets, and direct packer-buying activities tended to sharpen competition for the limited hog supply in this area. Transportation costs to the terminal market were lower than from other areas. Highest prices paid for 240- to 270-pound hogs (Appendix Table 5)



undoubtedly were due to the influence of the Chicago terminal market which paid high prices for heavy butchers. Local markets had to meet Chicago competition to maintain volume.

Several factors were responsible for exerting an upward pressure on prices in Area 5, the second highest-priced area. There was a short supply of hogs relative to other parts of the state; there was keen competition between many small packers who depended upon this area as their major source of supply; and some dealer and trading margins may have been eliminated. Competition from the Evansville and St. Louis terminal markets, and from packers in the southeastern United

States who had lower transportation costs from Areas 4 and 5 than other areas of the state, may also have been important.

The St. Louis terminal market directly influenced prices paid in Area 4. Area 6, the predominant cash-grain part of the state, produced a relatively low volume of hogs. Producers in this area had the alternative of shipping hogs either to Chicago or Indianapolis, or selling to local markets for shipment to eastern packers.

Area 2 had the greatest concentration of hogs and lowest average prices, marketed slightly heavier hogs, and had many country dealers operating in the area. Most hogs from this area were shipped to distant packers. The lack of direct packer-buying operations may have been a reason for lower prices in this area. Buying organizations located in Area 2 were able to discount hogs more extensively when specifications were not met because there was a larger volume from which to select. The buying organizations may also have followed the practice of setting relatively low prices in their major supply area, and then purchasing any additional volume required from other areas at slightly higher prices. Order buyers established a "setup price" for western Illinois of from 10 to 25 cents per hundredweight below eastern Illinois and Indiana prices to overcome locational disadvantages, i.e., higher transportation costs, to eastern markets.

Significantly higher prices were paid in Area 1 than in Area 2, but prices in Area 1 were still relatively low when compared with prices in other parts of the state. Area 1 had a large surplus of hogs. Many out-of-state packers maintain buying points in that area. Packing plants adjacent to the area bought hogs directly at the door. Most packers followed specification-weight buying which may have caused country markets to discount hogs rather extensively when weight specifications were not met. Area 3 was dominated by the Peoria Terminal and a few country buying points.

### **Area weight-price comparisons**

In all areas, prices paid for 200- to 220-pound hogs were the highest of any weight class. The base price used was the 200- to 220-pound price. There was considerable variation in prices paid for different weights of hogs marketed in different parts of the state (Appendix Table 5). In Area 7, highest average prices per hog were paid for the heavier weight classes and there was less difference in price spread among the different weight classes. Area 5 had the lowest average prices for the heavier butcher hogs. Producers of 180- to 200-pound

butcher hogs could anticipate receiving 36 cents less for each hog sold in Area 2 than in Area 1, but they could also anticipate obtaining 18 cents more for 220- to 240-pound hogs in Area 2 than in Area 1. Heavy, 240- to 270-pound butcher hogs, sold for 92 cents per hog more in Area 7 than in Area 5. Throughout the state lightweight, 180- to 200-pound hogs, tended to be discounted more than medium, 220- to 240-pound hogs. But there was no uniform discount for the different weight classes.

A relatively large proportion of the 200- to 220-pound hogs in Area 2 was sold within 20 cents of the base price. This may be an indication that more hogs were purchased on a weight-schedule basis in this area than in the other parts of the state.

### **Lot size and area comparisons**

Most market transactions were in lots of from 1 to 10 head. Larger volume sales occurred in Areas 1, 2, and 3 than in other parts of the state (Table 5). The southern and eastern market areas 4 and 5 had a relatively small hog population which was associated with small droves. But hogs sold in lots of 1 to 10 head were priced significantly lower in all areas of the state. Greatest discounts for small lots were taken in Area 5 which handled a higher proportion of small lots than any other part of the state. Smallest discounts were taken in Area 2. Extremely large lots brought significantly higher average prices only in Areas 4 and 5. Prices of lots of from 20 to 100 head were not significantly different from the base price.

Table 5.—Distribution of Size of Lot Sold in Different Illinois Hog-Marketing Areas, 1959-1960

Area	Size of lot (head)								Total number of lots
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50	51 to 75	76 to 100	Over 100	
(percent)									
1.....	38.1	23.7	17.9	9.6	3.8	4.5	1.2	1.2	4,531
2.....	40.6	24.2	14.9	7.1	3.4	5.0	2.2	2.6	6,292
3.....	44.9	27.7	14.2	6.0	3.1	3.0	.7	.4	2,699
4.....	62.2	19.3	10.9	3.5	1.3	1.7	.6	.5	2,607
5.....	66.2	23.3	8.0	1.6	.4	.3	.1	.1	3,501
6.....	53.5	24.4	13.6	4.5	1.6	1.5	.4	.5	6,210
7.....	52.0	24.6	12.5	4.9	2.2	2.5	.7	.6	4,163

## **Market day and season as factors in pricing hogs in Illinois market areas**

Area 1 was the only market area in which lowest prices were paid on Monday. Although differences were small, the fact that this price relationship existed at all was significant since this differs from findings in studies at other universities and ran counter to the general day-of-week price relationships observed in this study. Location close to packer outlets may have been a primary reason for Monday's relatively low prices in Area 1. A packer policy of maintaining low prices in major supply areas adjacent to their plants and of boosting a "buffer price" in remote areas to induce flow may have been followed in this area. Nearby country markets could buy hogs and deliver them to the packers on the day they were slaughtered. There was no reason to hold hogs over for slaughter at the first of the week.

In Area 2, considerably higher prices were paid for butcher hogs on Monday than on other days of the week. Marketing costs resulting from shrinkage and feeding definitely effected prices paid for hogs delivered at country points on Thursday and Friday. Thursday was the lowest-priced market day. This probably occurred because eastern packers take most hogs shipped from this area. Packers prefer to slaughter hogs upon arrival at the plant and, therefore, avoid purchasing hogs for arrival on Saturday and Sunday.

There were significant differences in relative prices paid for the various weight classes of hogs at different seasons of the year in each area. Using September 1959 as base, Area 2 had the greatest price variation for different seasons of the year. Area 3 showed the least seasonal differences.

### **General area marketing observations**

Price variation among market areas can be expected because of differences in transportation and service costs from production areas to slaughter areas. However, the price differential between market areas followed no consistent price pattern. Large day-to-day price variations were an indication of market imperfections. Producers do not have sufficient data to compare prices in different localities and make informed decisions in choosing the best alternative markets with the existing market information system. One single price report for all areas and all weight classes does not provide enough information to make valid marketing decisions.

## PRICING PRACTICES BY THREE TYPES OF BUYERS

All country markets were classified as packer-buyer markets, order-buyer markets, or auctions. An analysis was made to determine pricing differences among these three types of markets.

At the outset one must realize that weighing conditions and shrinkage rates are not the same for the different types of markets, and even though price differences may appear, the apparent difference can sometimes be accounted for by variation in the amount of "fill" in hogs marketed.

The two regression and correlation models used in this analysis were identical to those analyzed for area price differences. Considering

Table 6.—A Comparison of Price Differences Paid for Butcher Hogs by Different Types of Illinois Country Hog Buyers<sup>a</sup>

Item	Order buyer	Packer buyer	Auction
(difference from the base price, cents per hundredweight)			
Weight class			
180-200.....	-22.77*	-27.63*	-24.25*
200-220.....	.....	base weight-class price	.....
220-240.....	-14.21	-14.88*	3.20
240-270.....	-67.39	-67.60	-35.44*
Size of lot			
1-10.....	- 9.74*	-11.95*	-12.63*
11-20.....	- 2.14*	- 2.22	16.21*
21-30.....	.....	base size-of-lot price	.....
31-40.....	0.22	1.32	12.03
41-50.....	- 4.0	- 0.88	- 3.21
51-75.....	.59	3.34	- .04
76-100.....	- .72	.33	1.83
Over 100.....	4.40	8.09	- 1.17
Day of week			
Monday.....	.....	base day price	.....
Tuesday.....	- 2.61*	- 0.92	6.07
Wednesday.....	1.04	- 3.71*	- 4.28
Thursday.....	- 4.08*	- 7.00*	1.20
Friday.....	- 6.18*	- 6.05*	- 5.08
Season of year			
September.....	.....	base season price	.....
December.....	- .37	- 8.18*	- 3.36
February.....	4.48*	- 6.84*	- 8.03
June.....	-14.37*	-17.37*	13.06*
September.....	6.44	-11.39*	.65
Type of buyer			
Average price.....	base	2.36*	7.68

\* Price differences that were statistically significant.

<sup>a</sup> These results are not derived from a single equation. Interpretation is found in the text. See appendix tables for summary of the analyses.

all hogs marketed, order buyers paid 2.4 cents per hundredweight less than packer buyers. Auctions paid an average of 7.7 cents more than order buyers, and 5.3 cents more than packer buyers (Table 6). (For more detail see Appendix Table 6.)

A tendency for packer buyers to pay lower prices than order buyers for light and heavy butcher hogs may encourage producers to market medium hogs at packer markets and sell light and heavier hogs to order buyers. Order buyers purchased a slightly smaller proportion of 200- to 220-pound hogs and a larger proportion of heavier hogs than packer buyers. Auctions handled a larger proportion of light and heavy hogs than either the packer or order buyers, but they paid the highest average price for country hogs.

Higher prices per hundredweight do not always mean more dollars per hog if one must sell fewer pounds. Shrink of  $\frac{1}{2}$  percent added because of difference in the kind of outlet or marketing conditions, can mean a difference of about 10 cents per hundredweight in the value of hogs. Buyers could afford to pay higher prices at auctions because they did not buy "fill."

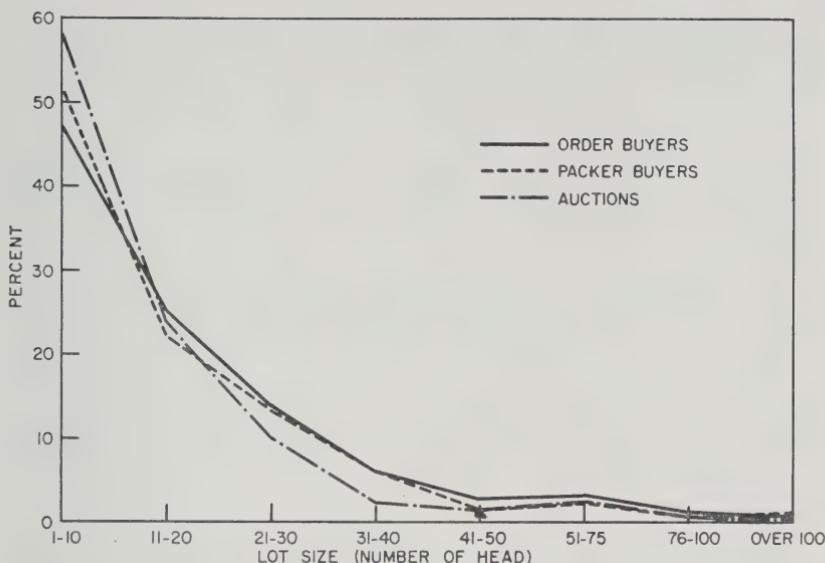
Hogs sold at auctions were usually held several hours after unloading and were weighed following the sale. Sorting, holding, penning and driving activities may have caused shrinkage of from 2 to 3 percent to occur between the time hogs were first unloaded until sold and weighed. On the other hand, packer- or order-buyer local markets weighed hogs on arrival directly from the truck.

While packer buyers tended to pay competitive prices for the 200- to 220-pound hogs, they also tended to discount all other weight classes more than other buyers (Appendix Table 6 and 7). Auctions discounted the price of heavier hogs only half as much as order buyers or packer buyers.

Significantly lower prices were paid for all other weight classes than for the 200- to 220-pound hogs by both order buyers and packer buyers,

Table 7.—Distribution of Sizes of Lot Purchased by Different Types of Illinois Hog Buyers, 1959-1960

	Head								Total number of lots
	1- 10	11- 20	21- 30	31- 40	41- 50	51- 75	76- 100	Over 100	
(percent)									
Order buyers.....	47.4	25.0	13.8	5.8	2.8	3.2	1.2	.8	17,088
Packer buyers.....	52.0	22.5	13.6	5.8	1.9	2.3	.7	1.2	11,435
Auctions.....	57.8	24.1	10.3	2.5	1.6	2.4	.7	.6	1,477



Distribution of sizes of lot purchased at Illinois country markets by order buyers, packer buyers, and auctions, 1959-1960. (Fig. 4)

but auction buyers did not pay significantly different prices for the 220- to 240-pound hogs than for 200- to 220-pound hogs. The following table shows the difference (base = average value of 200-220 pound butcher hogs) in the value of hogs bought by three kinds of Illinois country buyers in 1959-1960:

Weight class	Order buyers	Packer buyers	Auctions
		(dollars per hog)	
180-200.....	—.44	—.53	—.46
200-220.....	base	base	base
220-240.....	—.32	—.35	—.07
240-270.....	—1.71	—1.73	—.89

Approximately 83 percent of the butcher hogs purchased by order buyers were bought within 20 cents of the base price, compared with 58 percent by auctions, and 64 percent by packer buyers.

#### Buyers' prices by size of lot marketed

Most large-sized lots of hogs were sold at about the same price that was paid for the 21- to 30-head lots (Table 7). Each kind of buyer paid significantly lower prices for small, 1- to 10-head lots. Only auc-

tions paid significantly higher prices for 11- to 20-head lots than they did for the 21- to 30-head lots. The auctions handled more small, odd lots of hogs than either the order or packer buyers (Fig. 4). But the whole country market is troubled by the problem of marketing small-sized lots.

Packer buyers and order buyers paid from 3 to 7 cents more on Mondays than on other days of the week.

### PRICING PRACTICES OF EIGHT COUNTRY HOG-BUYING ORGANIZATIONS

Eight different organizations dominated the flow of hogs from Illinois country markets. This phase of the analysis attempted to identify variations in pricing practices among these different organizations. The models used in this analysis were identical to those used in the market area analysis.

Prices paid by competing country buying organizations were significantly different (Table 8), but ordinarily there was not enough magnitude in the difference that farmers could afford to reload hogs and move them from one market place to another. However, the prices were enough different to justify a telephone call to alternative markets.

Organizations 1, 2, and 3 were order buyers. Organization 4 was an aggregation of all packer-owned country buying points in which no single packer owned more than two markets. Organizations 5 and 6 were direct packer-buying organizations; Organization 7 was an aggregation of auction markets, and Organization 8 was an aggregation of independent privately owned and operated dealer markets.

Organizations 2, 4, and 7 paid 14 cents per hundredweight more for hogs than Organization 1, and Organization 8 paid 19 cents more than Organization 1. Each of these differences were statistically significant. While Organizations 3 and 5 paid lower prices than Organization 1, these price differences were not significantly lower (Appendix Table 8).

No one organization consistently paid highest prices for the different weight classes during each period. Some organizations never paid the highest price for any weight class, but Organizations 7 and 8 most consistently paid the highest average prices. During the June period, Organization 7 paid highest prices for all weight classes, while Organization 6 paid lowest prices.

The larger buying firms with a relatively large number of market points paid nearly identical average prices for butchers. Organizations

Table 8.—A Comparison of Price Differences Paid for Butcher Hogs by Eight Illinois Country Hog-Marketing Organizations<sup>a</sup>

Item	Market Organization							
	1	2	3	4	5	6	7	8
(difference from the base price, cents per hundredweight)								
Weight class								
180-200.....	-33.99*	-12.51*	-36.61*	-22.52*	-48.67*	-39.06*	-24.25*	-20.03*
200-220.....	-	-	-	-	-	-	-	-
220-240.....	-13.62*	-10.74*	-17.04*	-14.81*	-16.74*	-13.36*	3.20	-12.66*
240-270.....	-61.22*	-46.79*	-70.13*	-16.78*	-65.57*	-68.98*	-35.44*	-61.66*
Size of lot								
1-10.....	-19.77*	-8.40*	-22.67*	-10.84*	-17.61	-19.77*	-12.63*	-25.99*
11-20.....	-2.60	1.46	-1.51	-2.63	-2.52	-.01	16.21	-12.85*
21-30.....	-	-	-	base size-of-lot price	-	-	-	-
31-40.....	2.54	-.04	2.91	.80	4.11	-4.10	12.03	-19.41*
41-50.....	6.69	.02	.63	-4.90	9.64	3.81	-3.21	-18.67*
51-75.....	3.23	2.25	1.22	1.32	10.24*	5.16	-.04	-10.02
76-100.....	6.07	1.96	1.96	-.13	7.73	-9.71	1.83	-22.78
Over 100.....	3.98	7.03	8.57	-9.34	15.11*	5.35	-1.17	-18.23
Day of week								
Monday.....	-	-	-	base day price	-	-	-	-
Tuesday.....	-7.03*	2.03	-3.73	-1.49	5.99	-2.49	6.07	-6.84*
Wednesday.....	-3.89*	1.28	-.71	-5.04*	2.20	1.66	-4.28	-6.04
Thursday.....	-2.59	.77	-.37	9.08*	-2.96	4.15	1.20	-3.66
Friday.....	-5.36*	.70	-.94	8.81*	0.97	3.97	-5.08	-2.30
Observation period								
September '59.....	-	-	base period price	-	-	.... <sup>b</sup>	....	....
December '59.....	-12.74*	-12.63*	-6.94*	-4.80*	-21.21*	....	-3.36	-11.24*
February '60.....	-8.34*	-3.79*	-6.74*	-3.40*	-12.46*	base	-8.03	-7.31*
June '60.....	-12.82*	-6.63*	-1.30	-6.59*	-7.52	-28.38*	13.06*	-12.35*
September '60.....	-3.52*	1.03	-.28	-7.50*	-.41	-27.85*	.65	-10.35*
Country organization <sup>c</sup>	base	15.34*	-.85	13.93*	-.40	-7.11*	14.08*	19.35*

\* Price differences that were statistically significant.

<sup>a</sup> These results were not derived from a single equation. Interpretation is found in the text. See appendix tables for summary of analysis.

<sup>b</sup> Data are not available for Organization 6 for the first two periods.

<sup>c</sup> In this category the comparisons are with Organization 1.

with few marketing points, or smaller individual markets owned by different agencies that were grouped together because of similar characteristics, tended to price hogs about 15 cents higher than the larger country buying organizations. However, the small points tended to be satellites of packers or major order buyers. Frequently they specialized in one or two classes of hogs and functioned as the buffer sources when the normal flow failed to provide adequate supply for the country order-buying firms. For odd lots, it could be much cheaper for order buyers to buy a few hogs from outside area sources or independent markets than to raise the general price in the dominant supply area where they had country points.

A few independent country markets and some large operators paid significantly higher prices than some organizations who operated many country hog-buying points. There were several possible reasons for this. High fixed costs of some operators could mean a price discount of 25 cents in paying prices. Some small organizations were not established in the same regions as the larger organizations, thus their higher

competitive prices could not divert a significant proportion of the hog supply from the larger organizations. The large organizations were able to obtain an adequate volume from their own supply areas without raising prices in a more distant area. Without doubt the larger organizations were cognizant of each other's pricing activities, and maintained prices that were competitive with one another. Another reason was lack of communication; with the existing means of communications and price reporting, prices paid in different markets could not be compared directly by producers.

Small organizations have had more freedom to act in adjusting pricing policies than large hog-buying organizations. If a large organization increased its hog prices, other large organizations would be forced to follow suit to maintain their relative volume. Predatory price activities by small markets may affect one of the markets owned by a large organization, but not all of them. Evidence of this price relationship in practice can be seen in Appendix Table 9. For example: Organization 8 paid the highest average prices of all country markets.

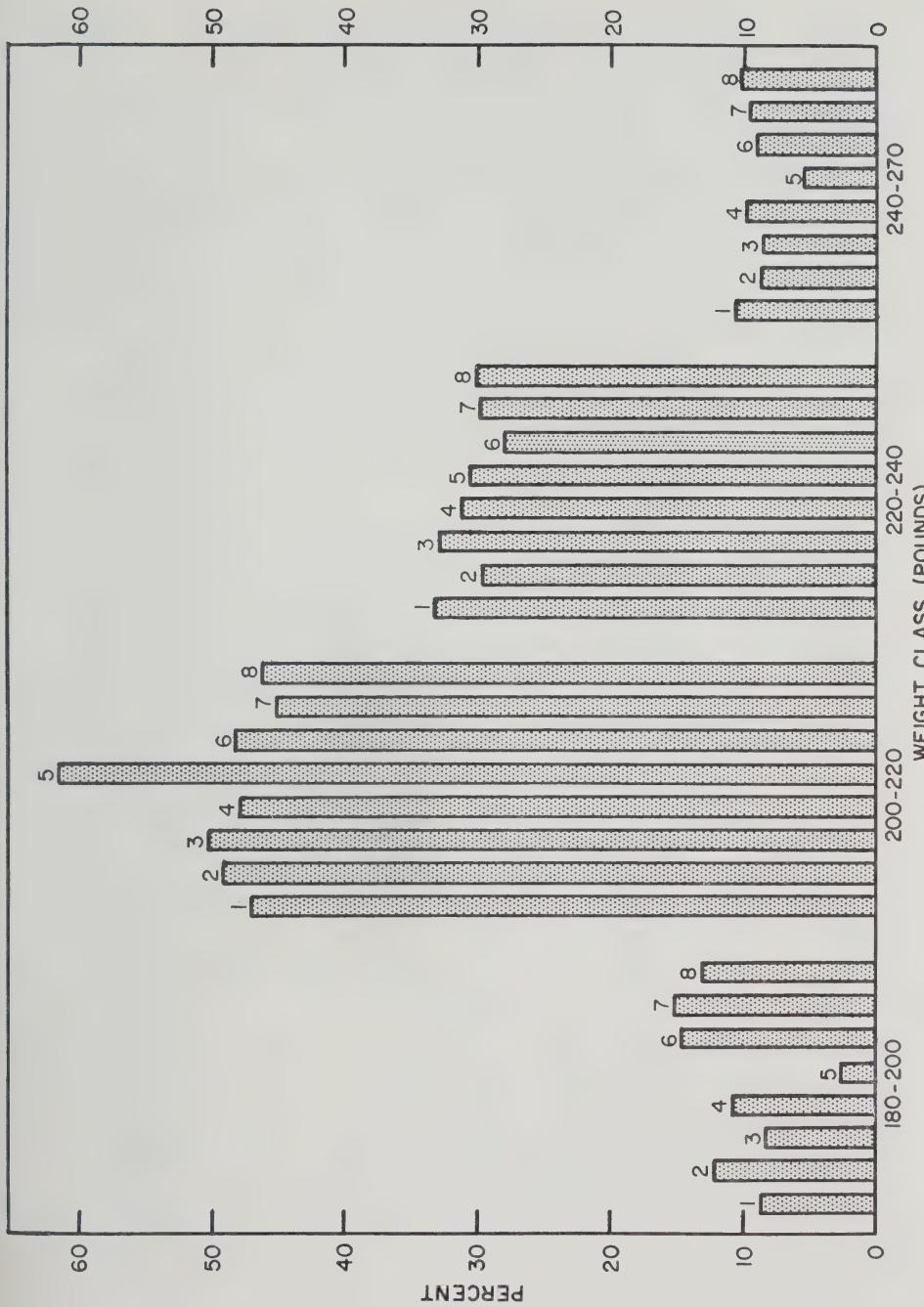
### **Weight as a factor in pricing hogs by buying organizations**

The best example of weight as a pricing factor can be seen in evaluating the buying practices of Organization 5. Organization 5 was the only buyer that attempted to specialize in buying 200- to 220-pound hogs. Over 93 percent of its hogs were purchased within 20 cents of the base price (Appendix Table 10). Both the light and heavy weights were discriminated against. This kind of buying policy encouraged farmers to sell hogs at recommended weights. Over 61 percent of the hogs purchased by this buyer were in the 200- to 220-pound weight class, compared with 45 to 50 percent by other buyers (Fig. 5).

Organization 5 differentiated prices at its local buying points. It paid relatively low over-all prices and yet purchased a larger proportion of 200- to 220-pound hogs than any other buying organization. It seldom paid higher prices than other organizations for 200- to 220-pound hogs, yet was located in a market area which had relatively high prices. Despite paying relatively low prices, each market point in Organization 5 maintained a relatively high volume of hogs.

### **General conclusions for country hog-buying organizations**

By sorting hogs into uniform meat-lots, buyers can obtain increased returns from hogs which yield a higher proportion of primal cuts, and at the same time pay producers relatively low prices for heterogeneous weights of hogs. Organization 5 illustrates that a firm can buy hogs of



(Fig. 5)

Percent of hogs purchased in various weight classes by country hog-buying organizations, 1959-1960.

desirable weight by establishing adequate price differentials in favor of hogs in that weight class. If a similar practice were followed by a large proportion of the trade, this would surely affect the breeding and feeding practices of producers in such a way that a larger proportion of such hogs would be supplied.

Although Organization 6 paid the lowest over-all prices, the consist of hogs purchased was not greatly different from the consist bought by other organizations. Had farmers been able to make definite comparisons between markets, this firm would not have been able to compete with other organizations, pay the lowest prices, and yet obtain hogs of about the same weight as competing organizations.

Organization 3 discounted heavy hogs 70 cents per hundredweight, and light hogs 37 cents per hundredweight. Normally they discounted more than all other organizations except 5 and 6 (Table 9); yet they purchased a larger proportion of 200- to 220-pound hogs than most other organizations (Fig. 5).

Organization 8 paid higher prices for lots of 21 to 30 head and discounted small lots more than other organizations. Yet 60 percent of its transactions were 1- to 10-head lots. This firm's sorting practices may have contributed greatly to its ability to differentiate prices. While Organization 5 did not pay highest prices for hogs, they bought lots of larger average size than their competitors. They used a substantially wider price deviation schedule between small and large lots of hogs to attract the large lots.

Table 9.—Distribution of Size of Lot Purchased by Illinois Country Hog-Buying Organizations, 1959-1960

Organization	Head								Number of lots
	1-10	11-20	21-30	31-40	41-50	51-75	76-100	Over 100	
(percent)									
1.....	52.4	23.9	13.8	4.6	2.2	1.8	.9	.4	6,941
2.....	41.1	25.4	14.9	7.3	3.6	4.8	1.6	1.3	5,072
3.....	40.9	27.5	13.7	6.9	3.3	4.8	1.6	1.3	3,624
4.....	55.4	22.1	13.1	5.6	1.5	1.6	.4	.3	8,284
5.....	29.2	18.1	13.8	8.3	5.0	8.2	4.6	12.8	766
6.....	52.6	25.8	12.4	4.2	1.9	2.4	.2	.5	1,778
7.....	57.9	24.1	10.3	2.5	1.6	2.4	.6	.6	1,477
8.....	60.0	22.6	10.1	3.6	1.7	1.5	.2	.3	2,100

## PRICING BUTCHER HOGS AT SELECTED ILLINOIS COUNTRY MARKETS

This phase of the analysis indicates the extent of price variation existing between competing country buying organizations and within organizations operating in "homogeneous" 20-mile radius supply areas. This evaluation considered hogs sold during June 1960 (Table 10).

Three locations were selected and delineated to represent typical northwestern, western, and southeastern Illinois market supply areas. A weighted average price was computed for each weight class marketed through each point. For all practical purposes, hogs of the different weight classes would satisfy the same relative market demand. Yet it is recognized there would be some variation within weight classes because of meat-yielding differences within and between lots. Since "quality" was not identifiable it had to be ignored. Prices paid at alternative markets were compared to show price differences between points of the same organization (Appendix Table 11).

In the northwestern Illinois location, three markets were operated by one dealer organization, and four markets were operated by packers. The average value differences ranged from 53 cents per hog for 260- to 270-pound hogs, to \$2.47 per hog for 180- to 190-pound hogs. There was a difference of \$2.02 per hog in the amount paid by alternative

Table 10.—Value Differences for Various Weight Classes of Hogs Sold Within a 20-Mile Radius, Three Selected Areas in Northwestern, Western, and Southeastern Illinois, June 1960<sup>a</sup>

Area	Weight class									
	180- 190	190- 200	200- 210	210- 220	220- 230	230- 240	240- 250	250- 260	260- 270	
(dollars per hog)										
All markets within the 20-mile radius										
Northwestern.....	2.47	1.46	.78	.84	1.42	2.02	2.25	2.24	.53	
Western.....	1.47	.94	1.19	.77	.72	1.34	1.81	1.56	1.59	
Southeastern.....	.50	.53	.27	.73	.22	.49	1.05	....	....	
Dealer markets in the same organization										
Northwestern.....	....	1.05	.49	.02	1.24	.59	1.13	1.92	....	
Western.....	.81	.35	.51	.26	.05	.54	.29	....	.29	
Direct packer points in the same organization										
Northwestern.....	1.30	.41	.76	.84	1.08	1.30	.59	1.45	.08	
Western.....	1.09	.10	.57	.24	.43	.78	.74	.89	....	

<sup>a</sup> Prices for each weight class were weighted by the total number and value of all hogs sold in each class. These figures represent the difference between the lowest and highest average prices paid at markets within the same area.

markets for lots averaging 230 to 240 pounds. The smallest difference was noted for 200- to 220-pound hogs, and for 260- to 270-pound lots.

In western Illinois, four markets were packer-owned, five were operated by one order-buyer, one was operated by a different packer, and two were dealers. In this area, the price differences varied from 72 cents for 220- to 230-pound hogs, to \$1.81 for 240- to 250-pound hogs.

The southeastern Illinois markets were operated by four different buying organizations; two were dealers, one was packer operated, and the other was privately operated. Producers selling to these markets could have received a difference of from 22 cents to \$1.05 per hog between the four markets, depending upon the weight class sold.

There was considerable price variation within the packer and dealer organizations located in northwestern Illinois. For example, cash receipts from the sale of 20 hogs averaging 225 pounds would have differed by \$24.80, depending upon which dealer-owned market bought the hogs. This same weight and number of hogs sold at alternative markets belonging to one packer would have amounted to a difference of \$20.80.

Dealer marketing points of the same organization in western Illinois paid producers a difference of from 5 to 81 cents per hog, depending upon the weight bought. Packer operated markets in the same general location varied prices from 10 cents to \$1.09 per hog for different butcher weight classes.

Farmers can profit by knowing prices paid at alternative outlets regardless of market ownership or control. It is fallacious to assume that all markets operated by the same company pay identical hog prices even though identical prices may be posted at the market. It is also absurd to assume that lots of the same average weight contain homogeneous kinds of hogs, but if the market does not differentiate prices significantly within or between lots, the producer is trading in the dark.

The prices paid and prices posted or reported at the market or by the news services often have little relationship to each other, so farmers cannot afford to allow habit to guide their selection of a hog market. Value differences of the magnitude shown can cover the cost of many telephone calls to various markets in a local region to inquire about prices paid for specific weight classes.

Table 11.—Daily Average Prices Paid by Market C for Butcher Hogs, Compared to Price Quotations,<sup>a</sup>  
Week Beginning February 26, 1959

Date	Weight class					
	170- 180 180	180- 190 190	190- 200 200	200- 210 .19	210- 220 .21	220- 230 .21
(dollars per hundredweight)						
February 22						
Posted price	12.00	13.00	13.25	13.25	13.10	13.00
Price paid	13.44	13.46	13.59	13.43	13.25	13.04
Difference <sup>b</sup>	.....	.....	.19	.21	.34	.25
February 23						
Posted price	12.00	13.00	13.25	13.25	13.10	13.00
Price paid	13.44	13.38	13.42	13.25	13.18	12.62
Difference <sup>b</sup>	.....	.....	.19	.13	.17	.18
February 24						
Posted price	12.25	13.25	13.50	13.50	13.35	13.25
Price paid	10.00	13.58	13.61	13.52	13.49	13.34
Difference <sup>b</sup>	-2.25	.....	.08	.11	.02	.14
February 25						
Posted price	12.25	13.25	13.65	13.65	13.50	13.40
Price paid	11.00	12.65	13.60	13.72	13.81	13.60
Difference <sup>b</sup>	-1.25	-60	-.05	.07	.16	.10
February 26						
Posted price	12.50	13.50	13.65	13.75	13.60	13.50
Price paid	13.33	13.86	13.90	13.85	13.81	13.75
Difference <sup>b</sup>	.....	.....	-.17	.21	.10	.21

<sup>a</sup> Price quotation is the schedule of prices posted at the market, indicating prices the market was paying for different weight classes.

<sup>b</sup> Base = price quotation.

Table 12.—Daily Average Price Paid by Market D for Butcher Hogs Compared to Price Quotations,  
Week Beginning February 26, 1959

Date	170- 180		180- 190		190- 200		200- 210		210- 220		220- 230		230- 240		240- 250		250- 260		260- 270															
	(dollars per hundredweight)																																	
	Weight class																																	
February 22																																		
Posted price <sup>a</sup>	11.25	12.00	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	11.50																
Price paid	12.75	13.25	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	12.25																
Difference <sup>b</sup>	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....															
February 23																																		
Posted price <sup>a</sup>	11.00	12.00	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	11.50																
Price paid	12.50	13.00	13.35	13.35	13.35	13.35	13.35	13.35	13.35	13.35	13.35	13.35	13.35	13.35	13.35	13.35	13.35	12.25																
Difference <sup>b</sup>	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....															
February 24																																		
Posted price <sup>a</sup>	11.00	12.00	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	11.50																
Price paid	12.75	13.25	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	12.25																
Difference <sup>b</sup>	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....															
February 25																																		
Posted price <sup>a</sup>	11.00	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.00																
Price paid	12.75	13.50	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	12.75																
Difference <sup>b</sup>	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....															
February 26																																		
Posted price <sup>a</sup>	12.00	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.00																
Price paid	12.25	13.75	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	13.00																
Difference <sup>b</sup>	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....															

<sup>a</sup> Schedule of price ranges posted at the market for different weight classes.

<sup>b</sup> Base = top price of the price quotation.

## COMPARISON OF ACTUAL PRICES WITH POSTED PRICES

Buying organizations quote "setup prices" to the market news reporters. ("Setup prices" are normally posted at all markets to indicate a schedule of prices that will be paid for different weight classes of hogs on a given day.) Since news reporters may interpret these quotations as prices paid for different weight classes of hogs, it is crucial that the price quotations be accurate. To check how posted prices compared with actual prices paid for hogs, a sample of actual prices paid was compared with setup prices for five different days (Tables 11 and 12).

Market C listed one daily price for each 10-pound weight class, but it usually paid producers from 10 to 20 cents per hundredweight more than the quoted prices. There were very few instances when the posted price ever exceeded the daily average price paid for different weight classes.

At Market D, setup prices were listed as a price range for each 10-pound weight class. Generally the daily average prices paid for specific weights of hogs exceeded the top price quoted for that weight class. Actual prices paid were usually from 10 to 50 cents higher than the top price quoted.

## SUMMARY AND IMPLICATIONS

The gradual shift in Illinois hog marketing, toward purchases at country markets by dealers, order buyers, and packer buyers, has not eliminated all the problems involved in hog marketing. The problems that have not been solved or appreciably alleviated by this shift are related to the inability of markets, including country markets, to identify quality differences in hogs. This leads to purchasing on a weight-schedule basis, and to a situation where price reporting provides an inadequate guide to producers who must decide where to sell their hogs. Producers thus tend to make their decisions on the basis of custom. Market news reports, which report prices paid according to USDA grades, add to the uncertainty, since the USDA grades are not used by the trade.

The price reporting system, weight-schedule pricing, and widely varying prices reduce the producer's incentive to produce quality hogs. Unless perceptible premiums are paid for hogs of high quality and of desirable weight (200- to 220-pounds), and unless these premiums are reported in terminology that is recognized by producers, the market

cannot effectively guide production. Because of inadequate price differentiations, farmers are encouraged to sell at weights heavier than those which would command highest prices in an efficient market.

The data analyzed show that prices of light and heavy hogs were usually lower than those of hogs in the 200- to 220-pound weight class, but that during the fall months the prices were about the same. Over 90 percent of the hogs marketed in September were in weight classes for which the average price was within 25 cents of the price in the weight class with the highest average price. Highest prices for all weight classes were paid in June, but the relative discounts for heavy hogs were greatest in June and December. Over 40 percent of the 240- to 270-pound hogs marketed in these months were discounted more than 80 cents.

The distribution of hogs marketed among various weight classes was found to be different in different parts of the state. Hogs marketed from the northwestern and northeastern parts of the state were heavier than those from the south. Prices also differed by area, being higher in the northeastern and southeastern areas and lowest in the western and northwestern areas.

Significant price differences were also found among the specific buying organizations within these categories. Even within some of these buying organizations, significantly different prices were paid for hogs of the same weight class at buying points which were in the same area.

Significant differences in prices attributable to size of lot indicate that farmers would profit from sorting hogs into larger and more uniform lots, rather than have the hogs sorted after sale at the market. Lower prices tended to be paid for light and heavy hogs, and still lower prices were paid for these hogs in small lots. Selling inferior hogs in small lots to avoid mixing them with better hogs is appropriate, but too many hogs are now being discounted because they are sold in small lots.

Sorting could best be done on the farm, but sorting by selling firms on the market could also be profitable. The discounts found in this study for small lots should be a warning to producers who have refused to sort their hogs for quality or to allow them to be sorted. The selling of larger and more uniform lots of hogs would encourage the development of acceptable uniform standards and nomenclature, and this would make possible not only better functioning of the market itself, but meaningful price reporting for the country markets.

The differences noted above among different buying organizations, and buying points of the same organizations, increase the importance to producers of knowing the prices being paid at all accessible markets. Markets operated by the same company may pay considerably different prices.

Price reporting is complicated not only by these differences, but also by the fact that significantly different prices are paid in different areas of the state.

Price quotations purported to apply to the entire state do not reflect actual prices paid, so that prices can perform their normal function of guiding producers in marketing hogs.

Differences in prices reported for alternative competing country buying organizations cannot be taken at face value. Deviations in prices actually paid from posted prices and differences in the weighing or "fill" conditions affect the meaning of these reports. Auctions tended to pay higher average prices, but the hogs were often subjected to delayed weighing and then sold "shrunkout" at nominally increased prices. The actual take-home pay for a given lot of hogs may have been less than would have been received "filled" at the lower prices. The shrinkage cost when hogs are held off feed and water can amount to over \$2.00 per hog.

Price spreads among weight classes at a given market point appear to influence producers more than price differences among competing market points. The organization that bought the greatest proportion of 200- to 220-pound hogs paid relatively low average prices, but the discount for heavy and lightweight hogs made the price paid for 200- to 220-pound hogs appear to be high. This organization, by manipulating relative price incentives, was able to buy more 200- to 220-pound hogs than its competitors without paying higher average prices. Adequate market price information would help producers select the most appropriate market for their hogs.

Illinois has an "Interior Market News Service" which quotes a single daily price schedule report for the state. This report for "interior Illinois" is inadequate to inform either the producer or the trade of price differences that exist among and within market areas. It does not recognize differences paid for size of lot sold, or differences paid by alternative buying organizations. It fails to adequately identify differences in prices paid for different weight classes or for different kinds of hogs marketed at the same time in alternative supply areas. The existing market news reports provide only a rough general indication of the market price relationships in the state.

Revision of grades and standards, and improvement of the market news reporting service can contribute to the ability of the market to recognize and pay for quality hogs. This ability cannot only reflect the price differences noted in the study, but can also develop the additional premiums necessary to the adequate differentiation of market hogs according to quality.

## APPENDIX

The models to be described here were used to test the influence of weight, size of lot, time of sale, market area, and market organization on prices paid for hogs in Illinois. They were of the general form:

$$Y = u + W_1 + L_j + D_k + T_m + A_n + C_o + E_p \text{ where}$$

$Y$  = deviation price per hundredweight,

$u$  = constant term,

and the subscripted capitals designate regression coefficients of dummy variables for the following classification of the data:

$W$  = weight term having four classes:  $W_1 = 180-200$ ;  $W_2 = 200-220$ ;  $W_3 = 220-240$ ;  $W_4 = 240-270$

$L$  = size of lot term with eight classes:  $L_1 = 1-10$  head;  $L_2 = 11-20$  head;  $L_3 = 21-30$  head;  $L_4 = 31-40$  head;  $L_5 = 41-50$  head;  $L_6 = 51-75$  head;  $L_7 = 76-100$  head;  $L_8 = \text{over } 100$  head

$D$  = day of week term with five classes:  $D_1 = \text{Monday}$ ;  $D_2 = \text{Tuesday}$ ;  $D_3 = \text{Wednesday}$ ;  $D_4 = \text{Thursday}$ ;  $D_5 = \text{Friday}$

$T$  = time periods of the study term with five classes:  $T_1 = \text{September 14-26, 1959}$ ;  $T_2 = \text{November 30-December 12, 1959}$ ;  $T_3 = \text{February 15-27, 1960}$ ;  $T_4 = \text{June 20-July 1, 1960}$ ;  $T_5 = \text{September 12-24, 1960}$

$A$  = area of state term with seven classes:  $A_1 = \text{Area 1}$ ;  $A_2 = \text{Area 2}$ ;  $A_3 = \text{Area 3}$ ;  $A_4 = \text{Area 4}$ ;  $A_5 = \text{Area 5}$ ;  $A_6 = \text{Area 6}$ ;  $A_7 = \text{Area 7}$

$C$  = type of buyer with three classes:  $C_1 = \text{order buyers}$ ;  $C_2 = \text{packer buyers}$ ;  $C_3 = \text{auctions}$

$E$  = buying organization with eight classes:  $E_1 = \text{Organization 1}$ ;  $E_2 = \text{Organization 2}$ ;  $E_3 = \text{Organization 3}$ ;  $E_4 = \text{Organization 4}$ ;  $E_5 = \text{Organization 5}$ ;  $E_6 = \text{Organization 6}$ ;  $E_7 = \text{Organization 7}$ ;  $E_8 = \text{Organization 8}$

The following continuous variables were not included in the general model shown above, but were included in selected models:

$G$  = average weight of hogs sold in a lot

$H$  = size of lot sold

I = daily number of hogs sold in 12 terminal markets and interior Iowa.

The  $W_i$ ,  $L_j$ ,  $D_k$ ,  $T_m$ ,  $A_n$ ,  $C_o$ , and  $E_p$  terms included in the models are regression coefficients of dummy variables.<sup>1</sup>

### Basic models used in evaluating Illinois country hog prices

Model I included all independent variables that were not closely inter-correlated. It considered the effect of differences in price deviation within the average weight G and  $G^2$ , day of week (D), time of year (T), and area of the state (A). Since there was relatively high inter-correlation between some of the dummy variables, these data did not permit isolation of variation in prices due exclusively to each of these major classifications.

Model II excluded the continuous variable (1), representing the daily number of hogs sold at 21 terminals and interior Iowa. The continuous variable ( $G^2$ ), and dummy variables ( $D_k$ ) from Model I were also excluded, and the size-of-lot dummy variables ( $L_j$ ), replaced the size-of-lot continuous variable (H), to determine pricing differences by lot sizes. Type of buyer ( $C_o$ ) was included to determine the net price differences between different types of buyers.

Model III was identical to Model II except that the organization dummy variables ( $E_p$ ) replaced the type-of-buyer dummy variables ( $C_o$ ).

In Model IV the effect of weight was measured by means of dummy variables ( $W_i$ ). Size of lot as a continuous variable (H) was included and dummy variables for size of lot ( $L_j$ ) were deleted. Area dummy variables ( $A_n$ ), replaced organization dummy variables ( $E_p$ ), because area variables accounted for more variation in Y than did organization or type-of-buyer variables.

No provision was made in Model V for a nonlinear relationship of weight to price. Weight of hogs sold (G), size of lot sold (H), and number of hogs sold (I), were included as continuous variables.

In Model VI the effect of weight was again measured by including dummy variables ( $W_i$ ). The variable (G), weight as a continuous variable, was eliminated. The other independent variables were the same as those in Model V.

Dummy variables are designated in the above discussion by the corresponding regression coefficients (subscripted capitals).

<sup>1</sup> Suits, Daniel B., "Use of Dummy Variables in Regression Equations," *Journal of American Statistical Association*, December 1957, p. 550.

Appendix Table 1.—Distribution of Hogs Sold in Each Price Deviation Class  
by Illinois Country Hog Markets, 1959-1960<sup>a</sup>

Weight class	Deviation prices (cents)										Total hogs marketed		
	Over 30	20 to 29	10 to 19	0 to 9	-1 to -9	-10 to -19	-20 to -29	-30 to -39	-40 to -49	-50 to -59	-60 to -69	-70 to -79	-80 over
180-200 pounds.....	5.6	4.6	11.3	15.0	15.2	14.8	9.4	7.4	5.1	3.0	2.5	1.5	4.6
200-220 pounds.....	6.0	6.0	15.8	23.0	21.3	16.8	6.7	2.7	.9	.2	.1	0	.5
220-240 pounds.....	3.2	4.2	10.0	16.3	14.4	15.4	13.0	8.2	6.1	3.9	2.3	1.2	1.8
240-270 pounds.....	1.1	.8	2.1	3.3	4.3	7.4	7.9	7.8	9.4	10.4	9.4	9.3	26.8

<sup>a</sup> Base = daily average price paid for 200- to 220-pound hogs.

Appendix Table 2.—Regression Coefficients, Standard Error of Regression Coefficients, Standard Error of Estimate, and Coefficient of Correlation for Illinois Country Hog Markets, 1959-1960<sup>a</sup>

Independent variables	Model I		Model II		Model III		Model IV		Model V		Model VI		Number of observations (lots)
	b	S <sub>b</sub>	b	S <sub>b</sub>	b	S <sub>b</sub>	b	S <sub>b</sub>	b	S <sub>b</sub>	b	S <sub>b</sub>	
Average weight ( $G$ )	.25	.17,78**	.02	.63**	.02	.63**	.02	.64**	.02	.64**	.02	.64**	30,003
Average weight ( $G^2$ )	.00	-.04**											30,003
Weight													
180-200 (W <sub>1</sub> )													
200-220 (W <sub>2</sub> )													
200-240 (W <sub>3</sub> )													
240-270 (W <sub>4</sub> )													
Size of lot continuous (H)	.01	.23**											
Size of lot													
1-10 head (L <sub>1</sub> )													
11-20 head (L <sub>2</sub> )													
21-30 head (L <sub>3</sub> )													
31-40 head (L <sub>4</sub> )													
41-50 head (L <sub>5</sub> )													
51-75 head (L <sub>6</sub> )													
76-100 head (L <sub>7</sub> )													
Over 100 head (L <sub>8</sub> )													
Number of hogs sold (I)													
Monday (D <sub>1</sub> )													
Tuesday (D <sub>2</sub> )													
Wednesday (D <sub>3</sub> )													
Thursday (D <sub>4</sub> )													
Friday (D <sub>5</sub> )													

(Table is concluded on next page)

Appendix Table 2.—Concluded

Independent variables	Model I		Model II		Model III		Model IV		Model V		Model VI	
	b	Sb	b	Sb	b	Sb	b	Sb	b	Sb	b	Sb
September 1959 (T <sub>1</sub> )	4.59**	1.10	11.22**	.90	5.48**	.85	8.14**	.83				
November-December 1959 (T <sub>2</sub> )	-2.44	1.60	.59	.86	-5.93**	.82	base	base				
February 1960 (T <sub>3</sub> )	-.43	.80	4.58**	.83	base	base	3.41**	.77				
June-July 1960 (T <sub>4</sub> )	-5.49**	.91	base	base	-4.44**	.82	-0.03	.81				
September 1960 (T <sub>5</sub> )			base	base	.09	.80	4.30**	.78				
Area 1 (A <sub>1</sub> )			13.11**	.91			7.39**	.84				
Area 2 (A <sub>2</sub> )			-20.14**	.85			base	base				
Area 3 (A <sub>3</sub> )			-12.00**	1.04			8.87**	1.00				
Area 4 (A <sub>4</sub> )			-4.49**	1.05			16.01**	1.01				
Area 5 (A <sub>5</sub> )			-3.09**	1.97			18.34**	.93				
Area 6 (A <sub>6</sub> )			-5.12**	.84			19.56**	.98				
Area 7 (A <sub>7</sub> )			base	base			15.96**	.78				
Order buyers (C <sub>1</sub> )			base	base			16.67**	.83				
Packer buyers (C <sub>2</sub> )			2.36**	.56			20.97**	.86				
Auctions (C <sub>3</sub> )			7.68**	1.26			20.83**	.92				
Organization 1 (E <sub>1</sub> )			base	base								
Organization 2 (E <sub>2</sub> )					15.34**	.84						
Organization 3 (E <sub>3</sub> )					-85	.94						
Organization 4 (E <sub>4</sub> )					13.93**	.74						
Organization 5 (E <sub>5</sub> )					-40	1.77						
Organization 6 (E <sub>6</sub> )					-7	1.11**						
Organization 7 (E <sub>7</sub> )					14.08**	1.31						
Organization 8 (E <sub>8</sub> )					19.35**	1.27						
Standard error of estimate	42.0		46.15				45.44	43.13	45.91	43.22		
Coefficient correlation		.50		.30		.35		.45		.32		

\* Significant at 5-percent level.

\*\* Significant at 1-percent level.

a b values for dummy variables represent differences in deviation price (dollars per hundredweight) from the base group for a particular classification with all other effects held constant.

Appendix Table 3.—Distribution of Hogs Sold in Each Price Deviation Class by Size of Lot in Illinois Country Hog Markets, 1959-1960<sup>a</sup>

Size of lot (head)	Deviation prices (cents) (percent)										Total hogs marketed		
	Over 30	20- 29	10- 19	0- 9	-1 to -9	-10 to -19	-20 to -29	-30 to -39	-40 to -49	-50 to -59	-60 to -69	-70 to -79	-80 over
1-4	4.6	3.5	6.8	9.0	10.4	12.5	8.3	6.6	5.8	4.3	3.9	3.3	20.4
5-9	5.6	5.2	11.0	14.2	14.0	14.4	8.7	6.5	4.7	3.2	3.0	2.2	7.3
10-14	4.8	4.8	12.4	16.3	15.5	14.7	9.5	5.8	4.0	2.7	2.1	1.5	5.1
15-19	4.9	4.9	11.4	16.5	16.6	15.1	8.8	5.8	4.5	2.7	2.6	1.3	4.6
20-29	5.0	5.0	12.1	18.1	15.9	15.7	9.0	5.5	3.8	2.5	1.8	1.8	3.6
30-39	5.0	11.8	18.2	18.9	15.8	8.7	5.1	3.8	2.3	1.7	.8	3.3	70.018
40-49	4.2	11.1	17.0	19.4	18.5	10.3	4.6	4.1	3.0	1.0	1.1	2.3	35.397
50-99	3.1	3.0	14.1	18.5	19.0	17.2	9.7	4.6	3.2	1.8	1.3	2.8	83.224
Over 100	3.9	6.2	12.5	28.1	20.6	14.6	5.7	4.1	.7	1.5	.3	.7	1.1

<sup>a</sup> Base = daily average price paid for 200- to 220-pound hogs.

Appendix Table 4.—Regression Coefficients, Standard Error of Regression Coefficients, Standard Error of Estimate, and Coefficient of Correlation, for Each Illinois County Market Area<sup>a</sup>

Variables	Area 1			Area 2			Area 3			Area 4		
	b	Sb	Number of observations (lots)	b	Sb	Number of observations (lots)	b	Sb	Number of observations (lots)	b	Sb	Number of observations (lots)
<b>Model I</b>												
Average weight, . . . . .	.04	4.531	—7.0**	0.03	6.292	—0.49	2,699	—.56**	0.05	—.59**	0.05	2,607
Size of lot, 1-10 head . . . . .	1.74	1.725	—9.46**	2.11	2.557	—22.36**	1,213	—22.08**	1,621	—22.08**	1,621	—22.08**
11-20 head . . . . .	1.90	1.075	—4.53*	2.37	1.522	—.90	2.93	—2.83	3.02	—2.83	3.02	—2.83
21-30 head . . . . .	base	base	base	base	base	base	base	base	base	base	base	base
31-40 head . . . . .	2.42	437	—.36	2.49	444	1.54	4.38	161	2.30	5.36	92	5.36
41-50 head . . . . .	3.40	173	—1.22	3.22	215	.60	5.59	85	7.93	8.12	34	8.12
51-75 head . . . . .	3.19	205	—1.54	2.75	313	.15	5.67	82	6.70	7.31	45	7.31
76-100 head . . . . .	5.62	56	—2.22	4.00	140	11.95	11.23	18	9.75	11.14	17	11.14
over 100 head . . . . .	5.77	53	—.34	3.73	162	8.26	14.93	10	29.04*	13.37	12	13.37
Monday . . . . .	base	1,066	base	base	1,463	base	base	717	base	base	base	base
Tuesday . . . . .	1.07	1.85	—5.10**	1.85	1,162	—2.00	2.73	492	—5.36*	2.55	529	2.55
Wednesday . . . . .	1.97	710	—13.77**	1.86	1,118	—1.71	2.88	421	—3.00	2.60	492	2.60
Thursday . . . . .	4.25*	4.24*	—16.24**	1.85	1,095	—3.32	2.80	454	—3.08	2.67	462	2.67
Friday . . . . .	2.87	1.80	1,000	—12.77	7.64	1,454	1.46	2.57	615	—1.12	2.77	462
September 14-September 26, 1959 . . . . .	base	774	base	base	1,161	base	base	473	base	base	443	base
November 30-December 12, 1959 . . . . .	1.96	1,028	—10.72**	2.39	1,058	—3.03	3.14	416	—15.04**	2.80	469	2.80
February 15-February 27, 1960 . . . . .	—7.64**	1.93	1,068	—11.36**	2.06	1,474	—3.99	2.84	630	—6.71**	2.50	720
June 20-July 1, 1960 . . . . .	—8.31**	2.24	607	—12.27**	2.02	1,387	—7.20**	2.85	625	—12.07**	2.77	529
September 12-September 24, 1960 . . . . .	9.41**	1.93	1,054	—22.73**	2.29	1,212	1.30	2.93	555	—7.26**	2.89	446
Standard error of estimate . . . . .	40.58	46.61	—.32	46.41	.32	—.32	43.04	.37				
Multiple R . . . . .	.35											
<b>Model II</b>												
Weight 180-200 lbs. . . . .	1.78	574	—17.33**	1.83	820	—32.24**	2.49	430	—30.42**	2.22	467	2.22
200-220 lbs. . . . .	base	2,069	base	base	2,706	base	base	1,165	base	base	1,118	base
220-240 lbs. . . . .	1.33	1,329	—15.84**	1.37	1,900	—64.99**	2.04	779	—14.34**	1.95	719	1.95
240-270 lbs. . . . .	1.82	559	—53.70**	1.79	866	—66.13**	2.77	325	—66.71**	2.67	303	2.67
September 14-September 26, 1959 . . . . .	base	774	base	base	1,161	base	base	473	base	base	443	base
November 30-December 12, 1959 . . . . .	—13.30**	1.82	1,028	—4.82*	2.33	1,058	—1.76	2.96	416	—14.22**	2.63	469
February 15-February 27, 1960 . . . . .	—7.36**	1.78	1,068	—8.10**	2.01	1,473	—1.98	2.68	630	—5.60**	2.36	720
June 20-July 1, 1960 . . . . .	—7.48**	2.06	607	—9.68**	4.91	1,387	—5.34*	2.69	625	—10.63**	2.49	529
September 12-September 24, 1960 . . . . .	—8.01**	1.79	1,054	—19.34**	2.23	1,212	.03	2.75	555	—5.38*	2.13	446
Standard error of estimate . . . . .	37.71	45.65	.37	43.94	.49	.44	.44	.44				
Multiple R . . . . .												

(Table is concluded on next page)

Appendix Table 4.—Concluded

Variables	Area 5			Area 6			Area 7		
	b	Sb	Number of observations (lots)	b	Sb	Number of observations (lots)	b	Sb	Number of observations (lots)
<b>Model I</b>									
Average weight	.84***	.06	3,501	-.80**	.04	6,210	-.54**	.04	4,163
Size of lot	-.41	.54***	3,08	-.14	.69**	3,323	-.11	.60**	2,31
11-20 head	-.20	.95***	2,319	-.18	.83	1,512	-.49	.54	2,021
21-30 head	-.30	base	816	1.05	base	841	base	base	522
31-40 head	-.50	base	283	2.40	2.70	283	1.63	3.88	206
41-50 head	-.20	base	870	3.46	4.18	100	3.17	5.33	92
51-75 head	-.75	base	15	3.16	4.33	94	6.15	5.08	103
76-100 head	-.110	base	9.82	4.83	7.51	28	4.14	8.99	29
over 100 head	-.122	base	57.50	8.98	7.33	29	8.79	9.47	27
Monday	57.43	base	869	base	base	1,565	base	base	1,291
Tuesday	base	base	772	-.312*	1.42	1,365	1.38	1.96	1,067
Wednesday	-.44	2.80	714	-.107	1.44	1,276	2.53	2.26	683
Thursday	-.10	2.87	608	-.1.24	1.57	1,022	-.89	2.32	625
Friday	-.08	2.99	608	-.4	1.7*	1.61	9.82	3.57	497
September 14-September 26, 1959	-.14	3.12	538	-.4	1.7*	base	base	base	613
September 30-December 12, 1959	base	base	422	-.11	.50**	1.53	1.255	-.15	1.07**
November 15-February 27, 1960	-.12	2.86	821	-.6	.00**	1.49	1.329	-.9	9.02**
December 20-June 27, 1960	-.9	2.97	750	-.8	.02**	1.54	1.144	2.74	2.49
June 20-July 1, 1960	-.17	6.42*	3.16	607	-.4	1.42	1.55	4.48	2.43
September 12-September 24, 1960	5.00	2.74	901	-.1	1.42	1.187	1.187	-.4	1,058
Standard error of estimate	56.53	.38		38.30	.34		47.00	.45	
Multiple R									.36
<b>Model II</b>									
Weight 180-220 lbs.	-.33	.84**	2.75	526	-.23	.02*	1.38	927	-.20
200-220 lbs.	base	base	1,521	base	base	2,688	base	base	650
220-240 lbs.	-.17	.86**	2.18	1,068	-.15	.01**	1.10	1,832	1,725
240-270 lbs.	-.86	.57**	3.13	.386	-.55	.90**	1.50	.763	1,337
September 14-September 26, 1959	base	base	422	base	base	1,295	base	base	551
November 30-December 12, 1959	-.9	.57**	2.73	821	-.9	.81**	1.44	1.255	613
February 15-February 27, 1960	-.8	.50**	2.82	750	-.5	.34**	1.41	1.329	811
June 20-July 1, 1960	-.18	.71**	3.01	.958	-.6	.80**	1.46	1.44	914
September 12-September 24, 1960	5.63*	2.62	901	-.79	1.46	1,187	-.3	1.40	767
Standard error of estimate	54.28	.46		36.36	.45		45.56	.46	1,058
Multiple R									

\* Significant at the 5-percent level.

\*\* Significant at the 1-percent level.

a b values for dummy variables represent differences in price deviation (dollars per hundredweight) from the base group for a particular classification with all other effects held constant.

Appendix Table 5.—Distribution of Hogs Sold in Each Price Deviation Class by Illinois Market Areas and Weight Classes, 1955-1960<sup>a</sup>

Area and weight class	Deviation prices (cents)										Total hogs marketed
	Over 30	20-29	10-19	0-9	-1 to -9	-10 to -19	-20 to -29	-30 to -39	-40 to -49	-50 to -59	
	(percent)										
<b>180-200 pounds</b>											
Area 1.....	1.3	1.7	5.9	19.1	14.3	13.6	12.7	7.9	7.5	3.9	3.5
2.....	.6	.7	7.1	10.7	12.7	18.3	10.3	12.4	7.6	3.4	2.0
3.....	.6	2.8	15.0	12.6	16.0	15.4	10.2	9.7	7.0	2.3	2.4
4.....	7.1	4.2	8.3	7.6	15.7	13.4	11.6	9.4	4.6	3.0	1.3
5.....	18.8	9.3	12.1	14.3	14.3	14.7	6.1	3.9	1.9	1.0	.8
6.....	2.9	6.5	17.1	18.6	14.7	13.0	7.8	5.0	4.5	2.8	2.3
7.....	6.1	5.7	12.0	18.8	18.9	14.1	9.0	6.8	2.0	1.8	1.3
											1.5
<b>200-220 pounds</b>											
Area 1.....	3.7	4.6	15.3	22.6	19.3	18.6	9.4	4.1	1.9	.4	.1
2.....	1.2	8.7	21.5	27.4	24.6	9.6	3.8	1.5	.2	.2	.1
3.....	2.2	2.9	18.8	22.6	23.2	20.0	6.6	2.2	.9	.3	.3
4.....	10.0	6.8	11.0	17.3	20.6	18.5	7.8	6.3	1.0	.4	.1
5.....	21.4	16.3	19.0	18.6	10.3	8.0	1.7	1.0	.3	.1	.1
6.....	3.9	8.2	23.6	26.5	18.8	10.7	4.6	3.0	.4	.2	.1
7.....	13.0	10.6	18.4	24.0	18.8	11.2	2.9	.7	.3	.1	.1
											1.1
<b>220-240 pounds</b>											
Area 1.....	1.7	3.1	11.1	13.5	16.5	17.3	13.2	7.9	6.3	4.2	2.5
2.....	.6	.2	2.7	14.4	16.2	20.0	17.4	10.1	7.4	5.5	2.7
3.....	2.4	2.5	11.4	12.4	19.0	15.7	15.7	9.6	5.5	2.4	1.9
4.....	5.3	2.4	9.8	18.6	17.7	15.9	7.7	8.2	5.6	2.7	1.5
5.....	13.6	12.9	15.1	12.8	9.2	12.4	6.1	5.7	4.2	1.2	1.3
6.....	2.2	5.3	14.5	20.9	16.7	14.1	8.4	7.1	4.9	3.2	1.6
7.....	5.5	6.4	12.4	17.6	14.3	17.1	11.2	5.3	5.0	2.3	1.4
											.6
<b>240-270 pounds</b>											
Area 1.....	..	..	.3	.7	2.3	2.4	4.2	10.6	6.7	9.0	10.8
2.....	..	..	.5	1.8	.7	3.7	8.1	7.1	8.2	9.7	11.4
3.....	..	..	4.1	2.0	4.6	1.8	4.4	1.1	7.9	10.3	12.8
4.....	..	..	3.5	2.3	3.5	1.5	4.7	7.0	11.6	9.4	10.5
5.....	..	2.1	2.3	2.6	2.8	5.0	10.0	7.2	7.4	8.5	11.0
6.....	..	4.2	4.3	5.5	9.0	13.0	8.1	6.5	12.3	9.4	7.4
7.....	..	4.3	1.5	2.0	5.8	7.3	13.0	7.1	9.4	11.8	7.0
											1.1

<sup>a</sup> Base = daily average price paid for 200- to 220-pound hogs.

Appendix Table 6.—Regression Coefficients, Standard Error of Estimate, and Coefficient of Correlation for Different Types of Buyers Operating Illinois Country Hog Markets, 1959 and 1960\*

Independent variables	Order buyer			Packer buyer			Auction		
	b	S <sub>b</sub>	Number of observations (lots)	b	S <sub>b</sub>	Number of observations (lots)	b	S <sub>b</sub>	Number of observations (lots)
<b>Model I</b>									
Average weight	-.79	.02	17,008	-.71	.03	11,435	-.17	.09	1,477
Size of lot 1-10 head (L <sub>1</sub> )	1.03	8,113	-	1.39	5,953	-	3.44	855	
11-20 head (L <sub>2</sub> )	-2.14**	1.10	4,273	-2.22	1.57	2,569	16.63**	3.97	356
21-30 head (L <sub>3</sub> )	base	base	2,355	base	base	1,555	base	base	152
31-40 head (L <sub>4</sub> )	.22	1.55	983	1.32	2.26	660	12.03	10.92	37
41-50 head (L <sub>5</sub> )	-4.0	2.05	473	-.38	3.52	219	-3.21	13.79	23
51-75 head (L <sub>6</sub> )	.59	1.92	553	3.34	3.24	263	-.04	11.22	35
76-100 head (L <sub>7</sub> )	-.72	3.06	197	.33	5.52	81	1.83	20.82	10
Over 100 head (L <sub>8</sub> )	4.40	3.53	145	8.09	4.33	137	-1.17	21.94	9
Monday (D <sub>1</sub> )	base	base	4,188	base	base	2,667	base	base	777
Tuesday (D <sub>2</sub> )	-.94	3,559	-	.92	1.38	2,344	6.07	3.97	362
Wednesday (D <sub>3</sub> )	1.04	3,191	-	1.04	1.41	2,166	-4.28	5.49	
Thursday (D <sub>4</sub> )	-.08**	.99	3,407	-3.11**	1.43	2,052	-1.20	7.46	82
Friday (D <sub>5</sub> )	-6.18**	.99	3,243	-6.05**	2.05	2,209	-5.08	6.92	96
September 1959 (T <sub>1</sub> )	base	base	3,649	base	base	1,471	base	base	61
November-December 1959 (T <sub>2</sub> )	-.37	1.04	3,498	-.818**	1.68	2,042	-3.36	4.15	319
February 1960 (T <sub>3</sub> )	1.09	3,569	-	1.55	3,088	-	4.72	228	
June-July 1960 (T <sub>4</sub> )	1.13	2,912	-	17.37**	6.62	2,427	13.06**	4.09	329
September 1960 (T <sub>5</sub> )	1.03	3,460	-	11.19**	1.61	2,410	.65	3.55	540
Standard error of estimate	41.54			48.68			65.23		
Multiple R.....	.37			.30			.02		
<b>Model II</b>									
Weight 180-200	-.22.77**	.92	2,407	-.27.63**	1.29	1,707	-24.25**	4.29	281
200-220	base	base	7,333	base	base	4,949	base	base	609
220-240	-.14.21**	.71	5,078	-.14.88**	1.03	3,380	3.20	3.81	407
240-270	-.67.39**	.95	2,170	-.67.60**	1.40	1,402	-35.44**	5.12	180
September 1959 (T <sub>1</sub> )	base	base	3,649	base	base	1,471	base	base	61
November-December 1959 (T <sub>2</sub> )	.30	.96	3,498	-.4.51**	1.58	2,042	-3.36	4.13	319
February 1960 (T <sub>3</sub> )	5.51**	1.01	3,569	-.4.88**	1.46	3,088	-8.03	4.71	228
June-July 1960 (T <sub>4</sub> )	1.05	2,912	-	-.14.79**	1.52	2,427	13.06**	4.08	329
September 1960 (T <sub>5</sub> )	.96	3,460	-	8.17**	1.52	2,410	.65	3.53	540
Standard error of estimate	38.73			46.90			65.23		
Multiple R.....	.43			.30			.024		

\*\* Significant at 1-percent level.

<sup>a</sup> b values for dummy variables represent difference in deviation price (dollars per hundredweight) from the base group for a particular classification with all other effects held constant.

Appendix Table 7.—Average Prices Paid for Different Weight Classes of Butcher Hogs by Three Different Types of Buyers at Illinois County Markets, 1959 and 1960

Date and type of buyer	Weight class (pounds)					
	170-180	180-190	190-200	200-210	210-220	220-230
(dollars per hundredweight)						
September 1959						
Order buyer.....	12.17	12.74	13.21	13.35	13.36	13.37
Packer buyer.....	12.00	12.94	13.19	13.39	13.46	13.38
Auction.....	12.99	13.24	13.26	13.23	13.31	13.30
November-December 1959						
Order buyer.....	11.34	12.05	12.17	12.13	12.14	11.96
Packer buyer.....	11.10	11.96	12.19	12.18	12.18	12.07
Auction.....	11.51	12.08	12.17	12.23	12.30	12.22
February 1960						
Order buyer.....	12.50	13.14	13.42	13.46	13.40	13.35
Packer buyer.....	12.43	13.11	13.42	13.53	13.47	13.41
Auction.....	12.60	13.17	13.30	13.41	13.54	13.54
June-July 1960						
Order buyer.....	16.10	16.67	17.04	17.09	17.08	16.93
Packer buyer.....	15.83	16.57	16.97	17.02	17.03	16.92
Auction.....	16.47	16.93	17.28	17.31	17.29	17.20
September 1960						
Order buyer.....	14.62	15.35	15.87	16.07	16.07	16.01
Packer buyer.....	14.72	15.25	15.88	16.02	16.02	15.98
Auction.....	14.96	15.29	15.92	16.01	16.02	15.99

Appendix Table 8.—Regression Coefficients, Standard Error of Regression Coefficients, Standard Error of Estimate, and Coefficient of Correlation for Different Illinois County Market Hog-Buying Organizations, 1959 and 1960<sup>a</sup>

Variable	1		2		3		4	
	b	Sb	b	Sb	b	Sb	b	Sb
	Number of observations (lots)		Number of observations (lots)		Number of observations (lots)		Number of observations (lots)	
Average weight	.03	.03	.02	.02	.04	.04	.03	.03
Size of lot 1-10 head	6,941	3,637	-.54**	1.32	.68**	3,624	8.284	8.284
Size of lot 11-20 head	1.63	1.82	-.8,40**	1.43	2.55	2.41	4.586	4.586
21-30 head	1.663	base	-1.46	1.286	-1.51	1.481	1.810	1.810
31-40 head	959	base	base	1.286	base	base	1.089	1.089
41-50 head	2.89	2.54	-.04	1.97	2.91	2.51	.467	.467
51-75 head	153	6.69	.02	2.59	3.00	.80	2.61	2.61
76-100 head	124	3.23	.25	2.30	2.44	.63	4.41	4.41
over 100 head	60	5.95	1.96	2.30	4.10	1.74	1.32	1.32
Monday	26	3.98	7.03	3.98	6.97	5.57	-.13	128
Tuesday	26	8.90	7.03	6.7	8.57	6.97	7.90	132
Wednesday	26	1.59	1.749	base	base	base	9.34	36
Thursday	26	1.66	1.254	2.03	1.33	1.215	base	36
Friday	26	1.70	1.162	1.28	1.37	1.024	base	36
September 14-September 26, 1959	1.65	5.36**	.77	1.39	.924	.71	2.57	1.524
September 30-December 12, 1959	1.62	1.62	.70	1.32	1.035	-.37	5.04**	5.04**
February 15-February 27, 1960	1.66	1.66	base	1.615	1.05	1.94	2.27	1.532
June 20-July 1, 1960	1.75	1.66	base	1.331	1.055	1.055	2.27	1.528
September 12-September 24, 1960	1.66	3.38**	1.06	1.35	1.060	-.321	1.62	1.528
Standard error of estimate	44.68	35	31.14	.37	46.31	.35	47.17	47.17
Multiple R.							.32	.32
Weight 180-200 lbs.	1.59	-33.90**	1.25	2.761	-36.61**	486	-22.52	1.51
200-220 lbs.	base	base	base	2,300	base	1,543	base	1,185
220-240 lbs.	1.21	2.071	-10.74**	1,460	-17.04**	1,135	-14.81**	1.18
240-270 lbs.	1.57	-61.22**	-46.79**	1.42	-70.13**	2.33	-67.78**	2,489
September 14-September 26, 1959	base	1,615	base	1,105	base	460	base	3,603
November 30-December 12, 1959	1.51	1,331	-12.63**	1.29	1.055	643	-4.80**	1.18
February 15-February 27, 1960	1.56	1.342	-3.79**	1.26	1.120	781	-3.40**	1.66
June 20-July 1, 1960	1.64	1.127	-6.63**	1.42	.731	740	-6.59**	1.920
September 12-September 24, 1960	1.66	-3.38**	1.06	1.03	1,060	-.28	2.28	1.508
Standard error of estimate	42.23	46	29.77	.46	43.50	.46	44.95	1,813
Multiple R.								.43

(Table is concluded on next page)

Appendix Table 8.—Concluded

Variable	5		6		7		8		Number of observations (lots)
	b	Sb	b	Sb	b	Sb	b	Sb	
<b>Model I</b>									
Average weight	.07	766	-.42**	1,938	-.17	.09	1,477	-.47**	2,100
Size of lot 1-10 head	3.71	223	-.19,77**	4.04	3.44	.855	-.25,99**	3.41	1,261
11-20 head	4.02	139	-.01	4.41	3.97	.356	-.12,85**	3.78	475
21-30 head	base	base	base	base	base	base	base	base	212
31-40 head	4.11	64	-4.10	7.24	12.03	10.92	3.7	19.41**	76
41-50 head	5.89	38	3.81	10.08	33	3.21	23	-18.67**	35
51-75 head	4.97	63	5.16	9.10	42	-.04	11.22	35	31
76-100 head	7.73	6.08	-9.71	27.13	4	1.83	20.82	10	22.78
over 100 head	4.42	98	5.35	18.28	9	-1.17	21.94	9	18.19
Monday	base	base	base	base	base	base	base	base	6
Tuesday	5.99	134	-2.49	4.12	300	6.07	3.97	362	457
Wednesday	2.20	158	1.66	3.94	357	-4.28	5.49	160	3.07
Thursday	-2.96	3.61	1.30	4.15	256	1.20	7.46	82	456
Friday	.97	157	3.97	3.71	471	-5.08	6.92	96	3.15
September 14-September 26, 1959	base	123	....	....	base	base	base	base	392
September 14-September 26, 1959	4.14	122	....	....	....	....	....	....	281
February 15-February 27, 1960	3.71	185	base	base	876	-3.36	4.15	319	463
June 20-July 1, 1960	3.85	161	-28.38**	2.87	803	-8.03	4.72	228	421
September 12-September 24, 1960	.41	3.74	-27.85**	3.86	163	13.06**	4.09	329	434
Standard error of estimate	30.73	53.48	259	.65	3.54	.65	3.54	540	501
Multiple R	.51	.36	53.23	.02	.02	.02	.02	.02	45.56
<b>Model II</b>									
Weight 180-200 lbs	48.67**	81	-39.06**	3.39	334	-24.25**	4.29	281	327
200-220 lbs	base	325	base	base	774	base	base	base	898
220-240 lbs	2.15	256	-13.36**	446	3.20	3.81	407	597	2.28
240-270 lbs	2.92	104	-68.98**	3.87	224	-35.44**	5.12	180	2.97
September 14-September 26, 1959	base	123	....	....	....	base	base	base	281
November 15-December 12, 1959	3.30	122	....	....	....	-3.36	4.13	319	463
February 15-February 27, 1960	2.99	185	base	base	876	-8.03**	4.71	228	421
June 20-July 1, 1960	3.07	161	-29.08**	2.61	643	13.06**	4.08	329	434
September 12-September 24, 1960	3.03	175	-13.62**	3.69	259	.65	3.53	540	501
Standard error of estimate	25.47	50.19	50.19	.48	.48	.65	.23	.42	.92
Multiple R	....	....	....	....	....	....	....	....	.43

\* Significant at the 5-percent level.

\*\* Significant at the 1-percent level.

a values for dummy variables represent differences in price deviation (dollars per hundredweight) from the base group for a particular classification with all other effects held constant.

Appendix Table 9.—Average Prices Paid by Illinois Country Market Buying Organizations for Different Weight Classes of Butcher Hogs, 1959 and 1960

Date and organization	Weight class (pounds)					
	180-190	190-200	200-210	210-220	220-230	230-240
(dollars per hundredweight)						
September 1959						
Organization 1.....	12.60	13.07*	13.28	13.34	13.35	13.33
2.....	12.84	13.33	13.39	13.44	13.44	13.43**
3.....	12.67	13.11	13.36	13.33	13.32	13.32**
4.....	12.90	13.21	13.41	13.51	13.40	13.35
5.....	12.58*	13.13	13.36	13.40	13.39	13.41*
6.....						13.50**
7.....						13.12
8.....	12.87	13.37**	13.26	13.31*	13.30*	13.26
						13.00
November-December 1959						
Organization 1.....	11.87	12.11*	12.01*	12.08*	11.94	11.68
2.....	12.20	12.21	12.17	12.00	11.74	11.43
3.....	11.94	12.14	12.12	11.92*	11.65	11.45
4.....	11.98	12.21	12.19	12.10	11.83	11.92*
5.....	11.35*	12.11*	12.16	12.15	11.99	11.62*
6.....						11.47
7.....						10.94
8.....	12.08	12.17	12.23	12.30	12.22**	11.95**
						11.69**
February 1960						
Organization 1.....	13.03	13.42	13.44	13.44	13.29	13.06*
2.....	13.25	13.50	13.50	13.45	13.46	13.36**
3.....	13.04	13.39	13.44	13.35*	13.32	13.33
4.....	13.11	13.45	13.52	13.49	13.47*	13.23
5.....	13.01*	13.27*	13.72*	13.48	13.26*	12.89
6.....	13.12	13.37	13.56	13.56**	13.41	12.91
7.....	13.30	13.41*	13.54	13.54**	13.29	13.02
8.....	13.39**	13.50**	13.58	13.53	13.33	13.37**
June 1960						
Organization 1.....	16.42	16.92	16.88	16.86	16.72	16.53*
2.....	16.87	17.06	17.07	17.13	17.05	16.80
3.....	16.55	17.06	17.14	17.10	16.93	16.73
4.....	16.77	17.03	17.10	17.05	16.85	16.57
5.....	16.74	16.95	17.17	17.04	16.92	16.34
6.....	16.24*	16.70*	16.78*	16.78*	16.69*	16.57
7.....	16.93**	17.28**	17.31**	17.29**	17.20**	16.54*
8.....	16.92	17.21	17.10	17.16	16.95	16.73**
September 1960						
Organization 1.....	14.87*	15.76*	16.01	16.00	15.93	16.41
2.....	15.55*	16.01**	16.12	16.09	16.05	15.78
3.....	15.23	15.81	16.06	16.08	16.02	15.96
4.....	15.39	15.90	15.98	16.00	15.89*	15.94
5.....	16.34	16.95	16.30*	16.04	16.17	15.55*
6.....	16.24*	16.82	15.71*	15.84*	15.95	16.12
7.....	15.29	15.92	16.01	16.02	15.90	16.20**
8.....	15.46	15.82	16.18	16.27**	16.28**	15.76

\* Low price paid  
\*\* High price paid.

15.62  
15.97\*\*  
15.46  
15.19  
15.30\*  
15.19  
15.16\*  
15.53  
15.81  
15.39

APPENDIX TABLE 10.—DISTRIBUTION OF HOGS PURCHASED IN EACH PRICE DEVIATION CLASS BY ILLINOIS COUNTRY MARKET HOG-BUYING ORGANIZATIONS BY WEIGHT CLASS, 1959-1960\*

Organization and weight class	Deviation prices (cents)										Total hogs marketed
	Over 30	20- 29	10- 19	0- 9	-1 to -9	-10 to -19	-20 to -29	-30 to -39	-40 to -49	-50 to -59	-60 to -69
	(percent)										
180-200 pounds											
Organization 1	1.8	2.0	6.0	12.8	15.7	14.1	13.2	10.2	7.3	4.0	3.8
2	.9	2.4	16.2	25.3	19.9	15.2	5.5	6.6	3.2	.7	.4
3	1	3.3	8.3	9.9	18.5	12.8	14.8	9.4	6.5	2.7	4.6
4	6.1	6.1	12.9	14.2	12.4	15.6	9.2	6.3	5.2	3.2	2.4
5	..	..	3.8	31.1	2.2	2.8	9.5	9.0	1.3	5.9	17.0
6	..	..	..	3.8	1.9	6.2	19.3	6.6	13.4	16.9	7.7
7	7.5	6.8	10.9	13.1	12.6	17.3	16.8	7.4	1.8	2.8	1.0
8	9.1	12.4	16.3	15.8	18.0	7.1	5.8	8.3	2.4	1.7	.9
200-220 pounds											
Organization 1	1.5	2.4	11.1	19.0	25.3	22.8	10.5	5.6	.8	.2	...
2	2.3	5.2	23.5	31.4	20.7	12.6	3.2	.7	.1	...	...
3	2.4	2.2	15.1	20.5	23.3	22.7	9.3	2.6	1.2	.2	.4
4	10.9	10.7	17.9	21.4	16.4	12.4	5.5	1.7	1.4	3	...
5	..	.3	7.2	38.0	31.7	16.4	6.2	.2	..	..	..
6	..	2.2	..	10.0	6.4	27.0	28.0	8.2	11.8	5.2	.3
7	17.1	15.0	14.6	15.8	16.1	11.6	6.3	2.4	.5	.1	...
8	18.5	18.3	18.0	18.9	13.4	7.9	4.2	.4	.1	.2	...

(Table is concluded on next page)

Appendix Table 10.—Concluded

Organization and weight class	Deviation prices (cents)								Total hogs marketed
	Over 30	20- 29	10- 19	0- 9	-1 to -9	-10 to -19	-20 to -29	-30 to -39	
	5	1.1	5.9	14.4	17.3	18.7	14.2	9.4	
<b>220-240 pounds</b>									
Organization 1	7.7	5.0	16.3	19.9	15.1	16.3	9.6	5.8	2.5
2	1.1	.8	3.6	11.3	15.6	19.6	19.7	11.0	6.8
3	6.1	7.9	12.1	15.8	14.9	14.7	10.1	6.2	5.1
4	...	...	5.3	23.5	16.0	18.4	14.0	8.3	7.4
5	1.5	...	3.8	3.8	16.5	20.7	13.7	16.1	8.6
6	8.4	8.4	14.2	22.1	13.7	14.2	9.1	4.4	4.0
7	7.2	10.4	12.6	13.9	12.6	12.1	12.0	10.1	5.3
8	...	...	...	...	...	...	...	...	...
<b>240-270 pounds</b>									
Organization 1	.4	.3	1.1	2.9	3.2	5.6	6.4	9.7	9.8
2	.0	...	4.7	7.1	9.5	15.9	6.1	6.2	9.9
3	...	...	2.6	.6	.5	1.0	6.6	9.3	8.1
4	.7	1.0	.7	2.1	3.1	5.8	8.7	7.7	11.1
5	...	...	...	2.6	.6	3.8	13.4	3.9	9.1
6	12.8	7	1.1	2.2	2.2	.6	3.3	4.7	3.7
7	12.8	4.4	2.9	3.2	10.6	13.1	9.8	6.6	11.6
8	...	.4	4	6.1	3.0	8.2	13.6	9.4	9.4

<sup>a</sup> Base = daily average price paid for 200- to 220-pound hogs.

Appendix Table 11.—Average Prices Paid for Butcher Hogs by Country Dealers and Packer Buyers Operating Within a Twenty-Mile Radius in Illinois, Week of June 20, 1960

Markets	Weight class (pounds)									
	170- 180	180- 190	190- 200	200- 210	210- 220	220- 230	230- 240	240- 250	250- 260	260- 270
(dollars per hundredweight)										
Northwestern Illinois										
Dealer 1	15.36	16.35	16.99	17.00	16.40	15.72	15.84	15.90		
2	16.21	16.82	17.00	16.75	16.28	16.18	16.20			
3	16.75	16.75	17.00	16.45	16.15		15.90			
Packer 4	16.00	16.75	16.75	16.60	16.46					
5	14.71	16.70	16.75	16.89	16.60	16.49	16.40	16.15	16.07	
6	16.00	17.00	17.00	16.80	17.00					
7	14.99	16.18	16.96	17.12	17.19	17.08	17.01	16.64	16.72	16.10
Western Illinois										
Dealer 8	15.50	16.30	16.99	17.00	16.77	16.47	16.23		15.85	
9	15.60	16.74	16.93	17.00	16.98	16.75	16.59	16.21	16.00	15.74
10	16.75	16.75	16.75	16.99	16.70	16.33	16.00			
11	16.75	16.75	16.75	16.90	16.88	16.75	16.59			
12	15.23	16.22	16.50	16.46	16.64	16.26	16.26			
Packer 13	15.50	16.09	16.50	16.72	16.75	16.04	16.04			
14	16.44	16.68	16.55	16.74	16.71	16.59	16.34	16.10		
15	16.71	16.71	16.71	16.75	16.76	16.59	16.59			
16	16.71	16.71	16.71	16.75	16.76	16.59	16.59			
Dealers and packers										
17	15.09	15.89	16.96	16.98	16.99	16.83	16.72	16.50	16.36	15.74
18	16.31	16.31	16.71	16.71	16.64	16.59	16.15	15.86		
19	16.95	16.89	16.89	17.08	16.92	17.06	16.41	16.51	16.50	
Southern Illinois										
20	16.75	17.00	17.21	17.21	17.01	16.62	16.50			
21	17.02	17.12	17.26	17.00	16.52	16.19	16.19			
22	16.85	17.14	17.16	16.96	16.60	16.62	16.62			
23	16.95	16.89	16.89	17.08	17.06	16.41	16.51	16.50		

APPENDIX TABLE 12.—Distribution of Hogs Sold in Each Price Deviation Class at Illinois Country Markets, by Season and Weight Class, 1959-1960<sup>a</sup>

Season and weight class	Price deviation (cents)										Total number of hogs
	Over 30	20-29	10-19	0-9	-1 to -9	-10 to -19	-20 to -29	-30 to -39	-40 to -49	-50 to -59	
(percent)											
180-200 pounds											
September 1959	.6	2.7	6.3	14.3	11.7	17.3	16.3	8.8	6.1	4.4	4.0
Nov.-Dec. 1959	2.8	7.4	16.6	21.0	20.4	11.3	10.8	2.4	3.0	2.1	.4
February 1960	8.5	3.4	11.3	16.3	18.2	17.1	6.5	7.3	4.8	2.6	.6
June 1960	2.0	7.7	16.2	10.9	13.9	17.0	6.1	8.2	3.3	1.4	.3
September 1960	3.9	2.9	6.6	14.1	11.1	10.5	10.5	9.5	8.2	4.8	4.1
											9.5
200-220 pounds											
September 1959	2.1	5.2	12.8	31.4	19.7	18.1	8.3	1.7	.4	.1	..
Nov.-Dec. 1959	4.4	7.2	16.0	22.8	21.0	17.7	8.1	1.5	1.0	.2	..
February 1960	6.1	3.2	14.5	20.2	27.9	21.9	4.3	1.8	.7	.2	..
June 1960	8.1	6.7	22.9	14.8	18.6	15.9	5.1	4.9	1.7	.3	..
September 1960	9.3	8.5	14.6	24.5	18.4	10.3	7.9	3.8	1.0	.2	..
											1.5
220-240 pounds											
September 1959	1.4	4.3	14.0	29.9	16.1	19.7	11.0	2.7	.7	..	..
Nov.-Dec. 1959	1.3	2.8	4.2	8.4	9.8	12.9	17.2	9.3	12.9	9.4	6.0
February 1960	3.8	2.2	6.3	9.7	16.1	22.2	12.7	12.3	7.9	4.0	1.7
June 1960	5.2	3.5	9.9	6.1	13.2	18.2	13.4	13.7	6.7	4.2	2.6
September 1960	5.3	7.3	14.8	24.1	20.3	12.3	9.3	2.9	1.1	.2	..
											2.4
240-270 pounds											
September 1959	.3	.1	3.6	11.7	13.9	20.3	16.0	15.0	7.2	2.9	2.1
Nov.-Dec. 1959	.2	..	.3	.3	.9	2.8	5.9	4.2	7.2	9.9	9.8
February 1960	.8	4	1.0	.8	2.1	7.3	7.0	8.9	14.8	17.6	14.0
June 1960	1.0	.4	1.7	1.8	2.1	2.4	2.9	5.6	9.4	12.8	13.3
September 1960	3.9	4.3	7.1	9.6	10.9	14.9	14.2	11.3	9.0	4.7	2.8
											2.3

<sup>a</sup> Base = daily average price paid for 200- to 220-pound hogs.



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